

**ATTACHMENT 1**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**

**DRAFT  
RESOLUTION NO. 01-100**

A Resolution Amending the Water Quality Control Plan  
for the Colorado River Basin  
to Establish a Total Maximum Daily Load for Sediment/Siltation  
for the Alamo River

WHEREAS, the California Regional Water Quality Control Board, Colorado River Basin Region (hereinafter Regional Board), finds that:

1. An updated Water Quality Control Plan for the Colorado River Basin (Basin Plan) was adopted by the Regional Board on November 17, 1993, approved by the State Water Resources Control Board (SWRCB) on February 17, 1994, and approved by the Office of Administrative Law on August 3, 1994.
2. Warm freshwater habitat (WARM), wildlife habitat (WILD), preservation of rare, threatened, and endangered species (RARE), water contact recreation (REC1), non-contact recreation (REC II), and freshwater replenishment (FRSH) are among the beneficial use designations specified in the Basin Plan for the Alamo River.
3. The Basin Plan includes narrative water quality objectives for total suspended solids, sediment, and turbidity for the Alamo River to protect the beneficial uses listed in Finding No. 2, above.
4. Water quality objectives are not being met in the Alamo River because direct and indirect discharges of silt-laden agricultural tailwater into the river and drain maintenance operations are adversely impacting the beneficial uses. The silt carries insoluble pesticides such as DDT and its byproducts, which bioaccumulate in fish tissue.
5. Pursuant to Section 303(d) of the Clean Water Act, the Regional Board, with the concurrence of the State Board, listed the Alamo River as water quality limited because of the sediment impairments. Section 303(d) of the Clean Water Act requires the establishment of the Total Maximum Daily Load (TMDL) of sediment/silt that can be discharged while still ensuring compliance with water quality standards. Section 303(d) also requires the allocation of this TMDL among sources of sediment/silt, together with an implementation plan and schedule that will ensure that the TMDL is met and that compliance with water quality standards is achieved.

6. The Alamo River Sediment/Siltation TMDL Report (hereafter "TMDL Report") and the proposed Basin Plan amendment (hereafter "Attachment 2") to establish the TMDL are hereto made part of this Resolution by reference.
7. The TMDL Report and related Basin Plan amendment attached to this resolution meet the requirements of Section 303(d) of the Clean Water Act. The amendment requires, in part, that nonpoint sources implement Best Management Practices (BMPs) to control sediment/silt inputs to provide a reasonable assurance that water quality standards will be met.
8. The Regional Board prepared and distributed written reports regarding adoption of the Basin Plan amendment in compliance with applicable state and federal environmental regulations (Title 23, California Code of Regulations, Section 3775 et seq.; and Title 40, Code of Federal Regulations, Parts 25 and 131).
9. The process of basin planning has been certified by the Secretary for Resources as exempt from the requirements of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) to prepare an Environmental Impact Report or Negative Declaration. (Pub. Resources Code, 21080.5; Cal. Code Regs., tit. 14, 15251, subd. (g).) The TMDL Report-Basin Plan amendment package includes an Environmental Checklist, an assessment of the environmental impacts of the Basin Plan amendment, and a discussion of alternatives, among other analyses. The amended Basin Plan, Environmental Checklist, TMDL Report, and supporting documentation are functionally equivalent to an Environmental Impact Report or Negative Declaration.
10. The Regional Board has considered federal and state antidegradation policies and other relevant water quality control policies and finds the Basin Plan amendment consistent with those policies.
11. Since January 1998, Regional Board staff has engaged interested parties in stakeholder involvement through regular meetings of the Silt Total Maximum Daily Load Technical Advisory Committee.
12. On \_\_\_\_\_, the Regional Board held a Public Workshop to consider the TMDL Report and the Basin Plan amendment. Notice of the Public Hearing was given to all interested persons and published in accordance with Water Code Section 13244 and Title 40, Code of Federal Regulations, Part 25.
13. Consistent with Title 23, California Code of Regulations, Sections 3778 through 3780, the Regional Board consulted about the proposed action with stakeholders in the Region and with other potentially affected parties, considered and addressed comments on the matter, and considered and incorporated feasible mitigation measures to avoid significant impacts on the environment.

14. On \_\_\_\_\_, the Regional Board held a Public Hearing to consider the TMDL Report and the Basin Plan amendment. Notice of the Public Hearing was given to all interested persons and published in accordance with Water Code Section 13244 and Title 40, Code of Federal Regulations, Part 25.
15. The Basin Plan amendment must be submitted for review and approval by the SWRCB, the Office of Administrative Law (OAL), and the U.S. Environmental Protection Agency. Once approved by the SWRCB, the amendment is submitted to OAL. A Notice of Decision will be filed after the SWRCB and OAL have acted on this matter. The SWRCB will forward the approved amendment to the U.S. Environmental Protection Agency for review and approval.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The Regional Board adopts the amendment to the Water Quality Control Plan for the Colorado River Basin as set forth in Attachment 2.
2. The Executive Officer is directed to forward copies of the Basin Plan amendment to the SWRCB in accordance with the requirement of Section 13245 of the California Water Code.
3. The Regional Board requests that the SWRCB approve the Basin Plan amendment in accordance with Sections 13245 and 13246 of the California Water Code and forward it to the Office of Administrative Law for approval.

I, Phil Gruenberg, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on \_\_\_\_\_.

---

Phil Gruenberg  
Executive Officer



## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 1 of 14  
04-04-01 DRAFT

### **An Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load**

#### **AMENDMENT**

(Proposed additions are denoted by underlined text, proposed deletions are denoted by ~~striktthrough~~ text)

**Page 3-1, edit the first paragraph under "II. GENERAL SURFACE WATER OBJECTIVES" to read as follows:**

Regarding controllable sources of discharge, in the absence of site specific objectives established herein, the following objectives apply to all surface waters of the Colorado River Basin Region:

**Page 3-8, following the section "D. Irrigation Supply Canals" Section, add the following new Section:**

#### E. Alamo River

##### 1. Total Suspended Solids

The annual average of the total suspended solids concentration in the Alamo River shall not exceed 200 mg/L. A Total Maximum Daily Load (TMDL) for Sedimentation/Siltation in the Alamo River has been developed. The TMDL and associated implementation actions are described in Chapter 4, Section V(B). Compliance Monitoring activities for the TMDL are described in Chapter 6, Section II(B).

**Page 4-5, edit the third paragraph under "III. NONPOINT SOURCES CONTROLS" to read as follows:**

The Federal Clean Water Act, as amended in 1987, includes Section 319 titled "Nonpoint Source Management Programs". Section 319 requires the States to develop assessment reports and management programs describing the States' nonpoint source problems and setting forth a program to address the problems. The State Water Resources Control Board (State Board) adopted its "Nonpoint Source Management Plan" in November 1988. The Plan was updated in December 1999 with adoption of the "Plan For California's Nonpoint Source Pollution Control Program," (hereafter referred to as "State NPS Program"), including "Volume I: Nonpoint Source Program Strategy and Implementation Plan for 1998-2013 (PROSIP)" and "Volume II: California Management Measures for Polluted Runoff (CAMMPR)" (adopted December 14, 1999, SWRCB Resolution No. 99-114). This Plan has a three-tiered ~~step management~~ approach to NPS water quality control whereby the following ~~strategies~~ tiers are implemented ~~in order~~ as needed:

1. ~~Voluntary implementation~~ Self-determined implementation of Best Management Practices (BMPs);
2. Regulatory-based encouragement of Best Management Practices; and
3. Effluent requirements.

Sequential movement through the tiers (e.g. Tier 1 to Tier 2 to Tier 3) is not required of the Regional Board. Depending on the water quality impacts and severity of the NPS problem, the Regional Board may move directly to the full regulatory and complementary enforcement actions specified in Tier 3. It is the preference of the Regional Board to regulate nonpoint sources of pollution using the least stringent tier possible, while attaining water quality standards.

## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 2 of 14  
04-04-01 DRAFT

**Page 4-6, edit the first sentence in the previous to last paragraph under "III. NONPOINT SOURCES CONTROLS" as follows:**

The State's Water Quality Assessment adopted in May 1992, lists the Salton Sea and all agricultural drains in the Colorado River Basin Region as being impacted by nonpoint source discharges, primarily of agricultural origin. The Regional Board adopted an updated Clean Water Act Section 303(d) list, which, in part, identifies the quality of the waters of the Salton Sea, Alamo River, New River, and Imperial Valley agricultural drains as being impaired by discharges of wastes from nonpoint sources, primarily of agricultural origin.

**Page 4-6, following the last paragraph under "III. NONPOINT SOURCES CONTROLS" and before "A. AGRICULTURE" add the following paragraph:**

Consistent with the 1999 State NPS Program, the Regional NPS Management Program includes:

- Implementation of the "Plan for California's Nonpoint Source Pollution Control Program"
- Implementation of this Basin Plan
- Implementation of other applicable statewide plans and policies
- Development and implementation of Total Maximum Daily loads for impaired and threatened surface waters
- Implementation of Regional planning and prioritization through the California Watershed Management Initiative
- Completion of annual workplans
- Public participation and coordination with stakeholders and cooperating agencies
- Coordination with local governments in the development of General Plans
- Formal agreements (Memoranda of Understanding and Management Agency Agreements)
- Implementation of the three-tiered approach to NPS Regulation
- Financial and technical assistance
- Water Quality Monitoring and Assessment and Regular Reporting
- Assessment of Management Measure Effectiveness

**Page 4-6, beginning with the fifth sentence of the first paragraph under "A. AGRICULTURE", edit as follows:**

This report established priorities for dealing with the drain systems based on a watershed approach. Drainage entities (e.g. water districts), including Imperial Irrigation District, Coachella Valley Water District, and Palo Verde Irrigation District, were identified in each of the four watersheds and the Regional Board will work closely with these entities to implement agricultural pollution controls. The ADM Report contains a time schedule for the development of Best Management Practices by the drainage entities. The ADM Report also contains locations, at which compliance with applicable standards will be initially determined. A surveillance and monitoring program is described in the report but its implementation is dependant on the availability of funding. In 1994, the Imperial Irrigation District (IID) adopted a Drain Water Quality Improvement Program, in which IID committed to monitor water quality, to develop and implement BMPs, and implement an education and outreach program to improve water quality in its drains and Alamo and New Rivers.

**Page 4-6, edit the second paragraph under "A. AGRICULTURE" so it reads as follows:**

The preferred approach toward addressing nonpoint source pollution is to deal with the problem on a watershed basis. The Imperial Valley portion Salton Sea Transboundary Watershed was has been identified as this Region's highest priority for control of agricultural pollution, based mainly on its relatively large size, the beneficial uses of waters in the watershed, the volume of discharge, and the severity of water quality degradation. California's 1998 Unified Watershed Assessment identified the Salton Sea Transboundary Watershed as a Category 1 (impaired) watershed. An integrated strategy of nonpoint source control activities is being developed and implemented in the Imperial Valley Watershed. Activities already in progress include a biomonitoring program (see Chapter 6—Imperial Valley Agricultural Drain Study), the Regional Trend Monitoring and Toxic Substances Monitoring Programs, (see Chapter 6), outreach and education (see below), and a BMP demonstration project (see below). Activities in the development phase include determination of appropriate waste load allocations and maximum daily loads (for silt, pesticides, selenium, and nutrients), identification

## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 3 of 14  
04-04-01 DRAFT

~~and approval of cost effective BMPs, evaluation of potential pollution control and prevention technology demonstration projects, and voluntary and/or regulatory implementation of approved BMPs.~~

**Page 4-7, edit the third sentence of the third paragraph under "A. AGRICULTURE" as follows:**

In addition to working with the identified drainage entities, the Regional Board will continue to work with local Resource Conservation Districts, the U.S. ~~Soil Conservation Service~~ Natural Resources Conservation Service, the State Department of Pesticide Regulation, the State Department of Food and Agriculture, County Agricultural Commissioners, ~~and college and university extension services, local Farm Bureaus, and stakeholder groups.~~

**Page 4-7, delete the last two paragraphs under "A. AGRICULTURE":**

~~One promising pollution control technology is being tested in the Imperial Valley. The Imperial Irrigation District has applied for and received a federal nonpoint source grant to conduct a pilot demonstration project to demonstrate the effectiveness of a desiltation basin in removing pesticides and silt from agricultural return flows. The Regional Board is overseeing the implementation of this project in its role as contract manager for the federal funds.~~

~~In the future, the Regional Board will carry out additional nonpoint source control activities as resources allow. These may include investigating the water quality impacts from drain maintenance and dredging, and developing and implementing BMPs to reduce the resulting water quality impact; investigating the use of biological treatment for agricultural pollution control; and overseeing the testing and development of BMPs to control selenium levels in agricultural return flows. Activities will also be directed in the future, as resources allow, to the other three Regional watersheds affected by agricultural pollution (the Bard Valley, the Palo Verde Valley, the Coachella Valley).~~

**Page 4-13, immediately prior to the Section "V. ACTIONS OF OTHER AUTHORITIES," add the following new Section and renumber the subsequent Section accordingly:**

### V. TOTAL MAXIMUM DAILY LOADS

#### A. New River Pathogen TMDL\*

#### B. Alamo River Sedimentation/Siltation TMDL\*

### SUMMARY

This TMDL was adopted by:

The California Regional Water Quality Control Board, Colorado River Basin Region on {insert date}.

The California State Water Resources Control Board on {insert date}.

The Office of Administrative Law on {insert date}.

The U.S. Environmental Protection Agency on {insert date}.

The following tables summarizes the key elements of this TMDL, now a part of State Regulation as part of this Water Quality Control Plan:

---

\* The complete administrative record for the TMDL is available for review upon request.

**ATTACHMENT 2**

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River  
Sedimentation/Siltation Total Maximum Daily Load

Page 4 of 14  
04-04-01 DRAFT

**Table 4-1: Alamo River Sedimentation/Siltation TMDL Elements**

<u>ELEMENT</u>													
<b><u>Problem Statement</u></b> (impaired water quality standard)	<u>Excess delivery of sediment to the Alamo River has resulted in degraded conditions that impair the following designated beneficial uses: warm freshwater habitat; wildlife habitat; preservation of threatened, rare, and endangered species habitat; contact- and non-contact recreation; freshwater replenishment. As the Alamo River discharges into the Salton Sea, sediment also threatens the same beneficial uses of the Salton Sea. Specifically, sediment serves as a carrier for DDT, DDT metabolites, and other insoluble pesticides including toxaphene, which pose a threat to aquatic and avian communities and people feeding on fish from the Alamo River; and suspended solids concentrations, sediment loads, and turbidity levels are in violation of water quality objectives. These current concentrations, loads, and levels are also forming objectionable bottom deposits, which are also adversely affecting the beneficial uses of Alamo River.</u>												
<b><u>Numeric Target</u></b>	<u>200 mg/L Total Suspended Solids (annual average)</u>												
<b><u>Source Analysis</u></b>	<table> <tr> <th><u>Source</u></th><th><u>tons/year</u></th></tr> <tr> <td><u>Agricultural Drain Discharges:</u></td><td><u>322,493</u></td></tr> <tr> <td><u>In-Stream Erosion &amp; Wind Deposition:</u></td><td><u>6,623</u></td></tr> <tr> <td><u>NPDES Permitted Facilities:</u></td><td><u>215</u></td></tr> <tr> <td><u>International Boundary</u></td><td><u>146</u></td></tr> <tr> <td><u>Total:</u></td><td><u>329,477</u></td></tr> </table>	<u>Source</u>	<u>tons/year</u>	<u>Agricultural Drain Discharges:</u>	<u>322,493</u>	<u>In-Stream Erosion &amp; Wind Deposition:</u>	<u>6,623</u>	<u>NPDES Permitted Facilities:</u>	<u>215</u>	<u>International Boundary</u>	<u>146</u>	<u>Total:</u>	<u>329,477</u>
<u>Source</u>	<u>tons/year</u>												
<u>Agricultural Drain Discharges:</u>	<u>322,493</u>												
<u>In-Stream Erosion &amp; Wind Deposition:</u>	<u>6,623</u>												
<u>NPDES Permitted Facilities:</u>	<u>215</u>												
<u>International Boundary</u>	<u>146</u>												
<u>Total:</u>	<u>329,477</u>												
<b><u>Margin of Safety</u></b>	<u>8,737 tons/year</u> (corresponds to 10 mg/L)												
<b><u>Seasonal Variations and Critical Conditions</u></b>	<u>Both the flow and sedimentation regimes within the Alamo River watershed are relatively stable, and the sediment and water sources within the watershed are relatively uniform and widespread; therefore, this TMDL does not include provisions other than the established load allocations and implementation plan for seasonal variations or critical conditions. Staff's analysis of potential water transfers out of the watershed indicate that the transfers are not likely to affect compliance with this TMDL, but could cause other water quality problems that will need to be addressed by the parties responsible for the transfers.</u>												
<b><u>Loading Capacity</u></b>	<u>174,747 tons/year</u>												

(This table is continued on the following page.)



**ATTACHMENT 2**

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 5 of 14  
04-04-01 DRAFT

**Table 4-1: Alamo River Sedimentation/Siltation TMDL Elements (continued)**

<b>ELEMENT</b>		<b># of IID Drains Identified within Reach</b>	<b>Sediment Load Allocation (tons/year)<sup>1,2</sup></b>
<b>Load Allocations and Wasteload Allocations</b>	<b>Load Allocations:</b>		
	• Natural sources of sediment to the Alamo River, including erosion and wind deposition, are allocated 8,737 tons/year.		
	• Waste discharges from nonpoint sources into the Alamo River shall not exceed the load allocations specified below:		
	<u>River Reach</u>		
	<u>Alamo River immediately downstream of the International Boundary, at the IID gauging station just north of the All American Canal, a point identified hereafter at "AR-0"</u>	<u>None</u>	<u>146</u>
	<u>Reach 1: Downstream from the International Boundary to a point approximately 100 feet downstream of the Ninth Street Drain outfall into the river, a point identified hereafter as "AR-1"</u>	<u>8</u>	<u>17,488</u>
	<u>Reach 2: This reach encompasses the river from AR-1 to a point downstream of the Pomello Drain outfall into the river and upstream of the Graeser Drain outfall into the river, a point hereafter referred to as "AR-2".</u>	<u>7</u>	<u>25,255</u>
	<u>Reach 3: This reach covers the river from AR-2 to a point downstream of the Holtville Main Drain outfall into the river and upstream of the Olive Drain outfall into the river, a point hereafter referred to as "AR-3";</u>	<u>8</u>	<u>24,501</u>
	<u>Reach 4: This reach covers from AR-3 to a point downstream of the Wills Drain outfall into the river and upstream of the Moss Drain outfall into the river, a point hereafter referred to as "AR-4";</u>	<u>12</u>	<u>31,887</u>
	<u>Reach 5: This reach covers the river from AR-4 to a point downstream of Rockwood Drain outfall into the river and upstream of the C Drain outfall into the river, a point hereafter referred to as "AR-5";</u>	<u>22</u>	<u>30,002</u>
	<u>Reach 6: This reach covers the river from AR-5 to the point where it intersects the Garst Road, a point hereafter referred to as "AR-Outlet."</u>	<u>12</u>	<u>19,469</u>
	<u>Tailwater outfalls discharging directly to the Alamo River.</u>	<u>a</u>	<u>7,830</u>
	<u>Natural Sources</u>		<u>8,737</u>
	<b>Waste Load Allocations:</b>		
	• The discharge from point sources shall not exceed the total suspended limits specified under 40 CFR 122 et seq., and the corresponding mass loading rates.		

**Footnotes for Table No. 4-1:**

<sup>1</sup> The sediment load allocation for any particular reach shall be distributed proportionately amongst the agricultural drains within that particular reach based on the relative flow contribution of each drain to the total flow contribution to the reach from the drains within the reach.

<sup>2</sup> The sediment load allocations herein have been calculated based on the estimated individual average drain flows within the reach for the 1994-1999 period. At lower or higher drain flows, the average annual load allocation for a particular reach shall not exceed the load given by:

$$LA_R = (180)(Q_R)(0.0013597)$$

Where:  $LA_R$  = Load Allocation for any of the Alamo River reaches identified above (tons/yr).

$Q_R$  = Reach Flow (ac-ft) = Total flow contribution to the reach from the drains within the reach (ac-ft).

<sup>a</sup>. The number of outfalls has not been determined.

## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 6 of 14  
04-04-01 DRAFT

**Table 4-2: Interim Numeric Targets for Attainment of the TMDL**

<u>Phase</u>	<u>Time Period</u>	<u>Estimated Percent Load Reduction*</u>	<u>Interim Target (mg/L)</u>
<u>Phase 1</u>	<u>2001 through 2003 (Years 1 – 3)</u>	<u>15%</u>	<u>320</u>
<u>Phase 2</u>	<u>2004 through 2007 (Years 4 – 7)</u>	<u>25%</u>	<u>240</u>
<u>Phase 3</u>	<u>2008 through 2010 (Years 8 – 10)</u>	<u>10%</u>	<u>216</u>
<u>Phase 4</u>	<u>2011 through 2013 (Years 11 – 13)</u>	<u>8%</u>	<u>200</u>

\* Percent reductions indicate the reduction required in total suspended sediment load from the average concentration of the Alamo River at the beginning of each phase, beginning with the 1980-2000 average concentration of 377 mg/L.

### 1. IMPLEMENTATION ACTIONS AND REGULATIONS FOR ATTAINMENT OF ALAMO RIVER SEDIMENTATION/SILTATION TMDL

#### 1.1 DESIGNATED MANAGEMENT ACTIONS

Consistent with the State NPS Program, sediment pollution shall be controlled by the Regional Board using a three-tier approach and controlled by responsible parties through implementation of Best Management Practices (BMPs). For the purpose of this Section, responsible parties include:

- Farmers/growers discharging waste into the Alamo River in a manner that causes or could cause violation of load allocations and/or exceedance of the Sediment/Silt numeric target;
- The Imperial Irrigation District;
- The United States Environmental Protection Agency and U.S. Section of the International Boundary and Water Commission.

##### 1.1.1 Farmers/growers Water Quality Management Plans

The farmers/growers shall submit self-determined sediment control programs to the Regional Board by {insert the date that corresponds 90 days following State Board Approval of this amendment}. A sediment control program may be submitted by an individual farmer/grower (hereafter "Individual Program") or by a group of farmers/growers (hereafter "Group Program"). In either case, the program shall, at a minimum, address the following components:

1. Name of farm owner, business address, mailing address, and phone number
2. Name of farm operator/grower, business address, mailing address, and phone number
3. Problem assessment (site location by address and township-range coordinates; site condition(s), crop(s) typically grown in a five-year cycle and typical irrigation method for each crop; and potential or current NPS problems)
5. Statement of sediment control goals (measurable outcomes or products)
6. Existing and/or alternative sediment management practices (technical/economic feasibility, desired outcome, etc.)

\*\* Note: Upon State approval (i.e., approval by the Regional Board, the State Water Resources Control Board), this parenthetical "formula" will be replaced by the date certain, based on the date of approval.

## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 7 of 14  
04-04-01 DRAFT

7. Timetable for implementation of management practices (measured in either water quality improvement or level of implementation)
8. Monitoring for tailwater quality improvements, progress toward goals, and effectiveness of management decisions
9. Mechanism for reporting planned and completed implementation actions to the Regional Board

A group program may address Item Nos. 1 through 7, above, for the individuals enrolled in the program as a group. The program shall nevertheless provide sufficient information so that the Regional Board can: (a) determine at a minimum on a drain- or drainshed-basis which responsible parties are enrolled in the program; (b) the types of sediment problems (i.e., severity, magnitude, and frequency) either the group as a whole or the drain/drainshed face; (c) the proposed sediment management practices for the group; and (d) the time table for implementation of the management practices (measured in either water quality improvement and/or level of implementation). Regarding Item Nos. 8 and 9, a single monitoring and reporting plan may also be proposed for a group provided that the monitoring and reporting will provide results that are representative of the efficiency of various control practices within the group and representative enough to measure overall water quality improvements. Reported implementation of BMPs shall be submitted to the Regional Board under the penalty of perjury.

All programs and reports specified herein are requested pursuant to Section 13267 of the California Water Code. In accordance with Section 13267(b)(2) of the California Water Code, when requested by the responsible party or group furnishing a program, the portions of a program, which might disclose trade secrets or secret processes, shall not be made available for inspection by the public but shall be made available to governmental agencies for use in making studies. However, these portions of a program shall be available for use by the Regional Board or any state agency in judicial review or enforcement proceedings involving the person or group of persons furnishing the report.

### 1.1.2 The Imperial Irrigation District

By (insert the date that corresponds to 90 days following State Board approval of this Amendment)\*\* , the Imperial Irrigation District shall submit to the Regional Board a revised Drain Water Quality Improvement Plan (DWQIP) with a proposed program to control and monitor water quality impacts caused by drain maintenance operations within the Alamo River Watershed and dredging operations in the Alamo River. The revised DWQIP shall be subject to the approval of the Executive Officer and shall address, but need not be limited to, items "a" and "b", below:

#### a. Drain Maintenance and Alamo River Delta Dredging Controls

- Control measures to ensure that dredging operations<sup>1</sup> in the drains and in the Alamo River Delta do not cause exceedance of the TMDL;
- Timeline for implementation of control practices; and
- Mechanism(s) to assess performance of control practices.

Implementation of control practices shall include appropriate seasonal restrictions to avoid impacts on sensitive resources, including the Alamo River Delta, and an appropriately certified CEQA document(s) for the practice(s) should the practice fall outside the scope of the functionally equivalent CEQA document certified by the Regional Board for this TMDL

#### b. Drain Water Quality Monitoring Plan

The revised DWQIP shall consist of a proposed program to monitor:

- Water quality impacts caused by dredging operations in the drains and to monitor the effects that dredging operations in the Alamo River Delta have on water quality and the Delta habitat;
- Representative samples from the water column<sup>2</sup> of all major drains and a representative number of the small drains tributary to the Alamo River for analyses of flow, TSS, Turbidity, selenium, total organic carbon, nutrients; and persistent pesticides such as DDT (and metabolites); pesticides that are applied by irrigation practices, such

<sup>\*\*</sup> Note: Upon State approval (i.e., approval by the Regional Board and the State Water Resources Control Board, and the Office of Administrative Law), this parenthetical "formula" will be replaced by the date certain, based on the date of approval.

<sup>1</sup> For the purpose of this Section, control practices should be prioritized based on feasibility and potential effectiveness and may include reduction and/or elimination of dredging operations in any particular area with the Alamo River Watershed.

<sup>2</sup> Samples collected from the last drain weir before the drain outfalls to the river shall be considered representative of the water column

## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 8 of 14  
04-04-01 DRAFT

as ETPC; pesticides used as pre-emergents and post-emergents by crop and season; as well as the pesticides used for the control of weeds in drains and channels, such as diuron.;

- A representative number of source water locations for TSS;
- A representative number of drains at a location sufficiently upstream of the outfalls to the river so as to provide an idea of how much silt is being taking care of by field BMPs;
- Sediment impacts from storm events;

### c. Information on Agricultural Dischargers

No later than 120 days prior to the adoption of this amendment by EPA, and on a semi-annual basis thereafter, the IID shall submit the following information to on the agricultural dischargers within the District:

The names and mailing addresses for all the owners of properties within the IID service area that are being used for irrigated agriculture, as well as the location of their properties. The names and mailing addresses for all water account holders within the IID service area, their water account number and the location of all fields that they irrigate. For each parcel within the IID service area, the location of the parcel, the irrigation canal and gates serving the parcel, the drop boxes draining the parcel, the drains that these drop boxes empty into, and the fields located within each parcel. For each field within the IID service area, the parcel within which each field is located, the area and location of each field within the parcel, the irrigation canal and gates serving each field, the drop boxes draining each field and the drains to which these drop boxes drain, and the crops being cultivated on each field, and the crops scheduled to be cultivated on each field within the next 6 months. The above information should be submitted in an electronic, tabular, and easily geo-referenced format.

No later than 60 days following the Executive Officer's approval of the revised DWQIP, the IID shall submit to the Executive Officer a Quality Assurance Project Plan (QAPP) prepared in accordance with *Requirements for Quality Assurance Project Plans for Environmental Data Operations*, EPA QA/R-5, 1994 for the revised DWQIP. The QAAP is subject to the approval of the Executive Officer. No later than 30 days following the Executive Officer's approval of the QAPP, the IID shall implement the QAPP and submit monthly, quarterly, and annual monitoring reports to the Executive Officer. The monthly reports shall be due on the 15<sup>th</sup> day of the month and shall transmit the previous month's monitoring results, progress towards implementation of control practices, and performance of control practices. The quarterly reports shall be due on the 15<sup>th</sup> day of the month following the calendar's quarter and shall transmit a quarterly summary of the results for the previous three months. The annual reports shall be due on February 15 and summarize the year's data, quality control reports, and any trends in the data.

All plans and reports requested herein are requested pursuant to Section 13267 of the California Water Code and shall be prepared under the direct supervision of a California registered civil engineer and/or agricultural engineer, with experience in the preparation of this type of program.

#### 1.1.3. United States Environmental Protection Agency (USEPA) and U.S. Section of the International Boundary and Water Commission (IBWC)

By (insert the date that corresponds to 90 days following State Board approval of this BP amendment)", the USEPA and/or the U.S. Section of the IBWC shall submit to the Regional Board a technical report pursuant to Section 13225 of the California Water Code describing the proposed control measures, monitoring plan and reporting procedures, and quality assurance procedures the U.S. Government proposes to take to ensure that discharges of wastes from Mexico do not violate or contribute to a violation of this TMDL, particularly a violation of the Load Allocation immediately downstream of the International Boundary, at the point identified as "AR-0.". The report shall be prepared under the direct supervision of a California registered civil engineer, with experience in the preparation of these types of reports and shall include a time schedule for implementation.

### 1.2 RECOMMENDED MANAGEMENT ACTIONS FOR FARMERS/GROWERS AND DRAINAGE MANAGEMENT

<sup>\*\*</sup> Note: Upon State approval (i.e., approval by the Regional Board and the State Water Resources Control Board), this parenthetical "formula" will be replaced by the date certain, based on the date of approval.

## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 9 of 14  
04-04-01 DRAFT

Implementation of BMPs should normally include: (1) consideration of specific site conditions; (2) monitoring to assure that practices are properly applied and are effective; (3) improvement of a BMP or implementation of additional BMPs or other management practices when needed to resolve a deficiency and; (4) mitigation of a problem where the practices are not effective. The practices listed herein are a compilation of BMPs recommended by the Technical Advisory Committee for the Silt TMDL for the Alamo River (Silt TAC), the Natural Resources Conservation Services Field Office Technical Guide (NRCS FOTG), the IID, and the University of California Cooperative Extension (Holtville Field Station). Inclusion of practices herein is not meant to imply or establish a prescriptive list of 'one size fits all' preferred practices for the drainage basins tributary to the Alamo River. These recommendations do not preclude dischargers from implementing other proven sediment management practices in order to be recognized as making a good-faith effort to control sediment discharges. Identification of the most appropriate controls to achieve the TMDL for site- and crop-specific conditions is best made by the landowner/operator relying on technical resource agencies and organizations. The listed practices are recommended because they have been documented to be effective under a variety of circumstances. Under many circumstances, implementation of a combination of BMPs may be necessary to ensure that discharges do not adversely impact water quality. In addition, the effectiveness of many BMPs can be greatly increased when they are used in conjunction with other BMPs.

### 1.2.1 ON-FIELD SEDIMENT CONTROL BMPs

The following practices have been recommended for implementation as on-field sediment-control BMPs (references are in brackets):

- **Imperial Irrigation District Regulation No. 39<sup>3</sup>**

Imperial Irrigation District's Regulation 39 states, in part, "It is the responsibility of each water user to maintain a tailwater structure and approach channel in acceptable condition, in order to qualify for delivery of water. An acceptable structure shall have vertical walls and a permanent, level grade board set a maximum of 12 inches below the natural surface. If the situation warrants, and at the discretion of the district, 18 inches maximum may be allowed." See also: NRCS FOTG Conservation Practice "Structure for Water Control" (Code 587).

- **Tailwater Drop Box with Raised Grade Board**

This practice involves maintenance of the grade board at an elevation high enough to minimize erosion. In many situations the grade board elevation can be set higher than required by the IID Regulations, especially when anticipated tailwater flows will not reach an elevation that will cause crop damage. See also: NRCS FOTG Conservation Practice "Structure for Water Control" (Code 587).

- **Improved Drop Box with Widened Weir and Raised Grade Board**

This practice involves widening the drop box overpour weir and maintaining the grade board at an elevation high enough to minimize erosion. Widening the drop box overpour weir enables the weir elevation to be set higher without raising the surface elevation of the water above the acceptable level. Higher weir elevations allow for an increased tailwater ditch cross section, and reduced erosion when water leaving the field enters the tailwater ditch. See also: NRCS FOTG Conservation Practice "Structure for Water Control" (Code 587).

- **Pan Ditch (Enlarged Tailwater Ditch Cross Section)**

This practice involves deepening and widening the tailwater ditch, which will result in decreased tailwater velocity and depth. The water must be checked up downstream of the oversized area to make the cross section of the water as large as practical. The slower the velocity, the more sediment will settle out of the water and stay in the field, and the less will be picked up by the moving water. The effectiveness of this BMP can be further improved by planting grass filter strips in the tailwater ditch and/or installing tailwater ditch checks.

- **Tailwater Ditch Checks or Check Dams**

Tailwater Ditch Checks are temporary or permanent dams that hold the water level well above the ground. They can be placed at intervals in tailwater ditches, especially those with steeper slopes. They increase the cross section of the stream of water, decrease the water velocity and reduce erosion, and may cause sediment already in the water to settle out. Tailwater Ditch Checks can be constructed of plastic, concrete, fiber, metal or other suitable material. If

<sup>3</sup> The Imperial Irrigation District Regulation No. 39 is a required BMP by IID.

## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River  
Sedimentation/Siltation Total Maximum Daily Load

Page 10 of 14  
04-04-01 DRAFT

plastic sheets are used, care must be taken not to allow pieces of the plastic to be carried downstream with the water. In order to be effective, this BMP must be utilized in condition where water velocities will not wash out the check dams or the sides of the tailwater ditch around the dams. Tailwater ditch checks or check dams are expected to work best in wide "pan ditches" where the width of tailwater stream can be effectively increased.

- **Field to Tailditch Transition**

This practice involves use of spillways or pipes where water moves from fields into tailwater ditches, allowing the tailwater to fall down into the tailwater ditch from the field without washing across and eroding the soil. Spillways might be constructed of plastic, concrete, metal, or other suitable material. If plastic sheets are used, care must be taken not to allow deterioration to cause pieces of the plastic to be carried downstream with the water. This procedure may be useful on fields irrigated in bordered-strips and furrows. Care must be taken to address erosion that may be caused in the tailditch at the location where the spillway discharges to the tailditch.

- **Irrigation Land Leveling**

This practice involves maintaining or adjusting field slope so as to avoid excessive slopes or low spots at the tail end of a field. In some cases it might be advantageous to maintain a reduced main or cross slope, which facilitates more uniform distribution of irrigation water and can result in reduced salt build-up in the soil, increased production, reduced tailwater, and decreased erosion. See also: NRCS FOTG Conservation Practice "Irrigation Land Leveling" (Code 464).

- **Filter Strips**

This practice involves elimination of borders on the last 20 to 200 feet of the field. Planted crop is maintained to the end of the field and tailwater from upper lands is used to irrigate the crop at the ends of the adjacent lower lands. It is important that the main slope on the lower end of the field is no greater than on the balance of the field. A reduced slope might be better. With no tailwater ditch, there should be very little erosion as the water slowly moves across a wide area of the field to the tailwater box. Some sediment might settle out as the crop slows the water while it moves across the field. This could be used with water tolerant crops or special soil conditions. See also: NRCS FOTG Conservation Practice "Filter Strip" (Code 393).

- **Irrigation Water Management**

Irrigation Water Management is defined as determining and controlling the rate, amount, and timing of irrigation water in a planned manner. Effective implementation of this practice can result in minimizing on-farm soil erosion and the subsequent transport of sediments into receiving waters. Specific methods of Irrigation Water Management include: Surge Irrigation, Cut-Back Irrigation, Irrigation Scheduling, and the Runoff Reduction Method. In some cases, irrigation water management could include the employment of an additional irrigator to assist in better monitoring and managing irrigation water and addressing potential erosion problems. Irrigator Water Quality Training could provide irrigators with the knowledge necessarily to implement IWM and other sediment control practices. See also: NRCS FOTG Conservation Practice "Improved Water Application" (Code 197, CA Interim) and NRCS FOTG Conservation Practice "Irrigation Water Management" (Code 449).

- **Sprinkler Irrigation**

Sprinkler irrigation involves water distribution by means of sprinklers or spray nozzles. The purpose of this practice is to efficiently and uniformly apply irrigation water to maintain adequate soils moisture for optimum plant growth without causing excessive water loss, erosion, or reduced water quality. See also: NRCS FOTG Conservation Practice "Irrigation System, Sprinkler" (Code 442).

- **Drip Irrigation**

Drip irrigation consists of a network of pipes and emitters that apply water to the surface or subsurface of the soil in the form of spray or a small stream.

- **Reduced Tillage**

This practice is the elimination of at least one cultivation per crop. It integrates weed control practices in order to maximize the effectiveness of cultivating weed control, but at the same time minimize erosion and sedimentation that may occur in the furrow.

## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River  
Sedimentation/Siltation Total Maximum Daily Load

Page 11 of 14  
04-04-01 DRAFT

- **Furrow Dikes (also known as “C-Taps”)**

Furrow dikes are small dikes created in furrows to manage the velocity of the water in the furrow. They can be either constructed of earth and built with an attachment to tillage equipment, pre-manufactured “C-Taps,” or other material, including rolled fiber mat, plastic, etc.

### 1.2.2 OFF-FIELD SEDIMENT CONTROL BMPs

The following practices have been recommended as off-field sediment-control BMPs (references are in brackets):

- **Channel Vegetation/Grassed Waterway**

This practice involves establishing and maintaining adequate plants on channel banks and associated areas to stabilize channel banks and adjacent areas and reduce erosion and sedimentation, and establishing maximum side slopes. This practice serves to stabilize the channel bank, reducing the potential for bank failure. See also: NRCS FOTG Conservation Practice “Channel Vegetation” (Code 322) and NRCS FOTG Conservation Practice “Grassed Waterway” (Code 412).

- **Irrigation Canal or Lateral**

This practice applies to irrigation drainage channels. One objective of the practice is to prevent erosion or degradation of water quality. Drainage channels should be designed to develop velocities that are non-erosive for the soil materials of which the channel is constructed. See also: NRCS FOTG Conservation Practice “Irrigation Canal or Lateral” (Code 320).

- **Sediment Basins**

Sediment basins are constructed to collect and store debris or sediment. The capacity of the sediment basin should be sufficient to store irrigation tailwater flows for long enough to allow most of the sediments within the water to settle out. The sediment basins also must be cleaned regularly to maintain their capacity and effectiveness.

### 1.3. RECOMMENDED ACTIONS FOR COOPERATING AGENCIES

#### 1.3.1. IMPERIAL COUNTY FARM BUREAU VOLUNTARY WATERSHED PROGRAM

The Imperial County Farm Bureau (ICFB) initiated a “Voluntary Watershed Program” in 1999, in which it committed to development of program elements, including “outreach programs and mechanisms to encourage and foster an effective self-determined approach to attainment of TMDL load applications.” To implement the program, the ICFB has committed to make contact with every farm landowner, renter/leaser, and operator, within one year, and to supply material related to the TMDL process, its ramifications, and implementation alternatives. The specific goals of the Voluntary Watershed Program include: (1) coordination of workshops with local technical assistance agencies, (2) development of local subwatershed (“drainshed”) groups, (3) identification of leaders, within each of the local subwatershed groups, who will provide demonstration implementation sites for field-testing of BMPs, (4) cooperation with Regional Board staff to develop a process for the subwatershed groups to track and report planned and implemented on-the-ground implementation and effectiveness of BMPs, and (5) provide linkage to technical assistance agencies for BMP implementation assistance. The ICFB has designated the geographical areas for ten (10) subwatershed groups, each covering approximately 50,000 acres of irrigated land. These geographical designations are to be utilized in the ICFB Voluntary Watershed Program’s approach to education and implementation. Although the Imperial County Farm Bureau is not a regulatory agency, it has committed to develop and implement a “Voluntary Watershed Program” that can play a vital role in achieving TMDL waste load allocations. Therefore, it is appropriate to recommend that the ICFB prepare, submit, and implement the following:

#### a. ICFB WATERSHED PROGRAM PLAN

The Imperial County Farm Bureau should:

## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 12 of 14  
04-04-01 DRAFT

- By (insert the date that corresponds to 30 days following State Board approval of this amendment) \*\*, issue letters to all potential program participants within the Alamo River watershed that describes the ICFB Voluntary Watershed Program.
- By (insert the date that corresponds to 80 days following State Board approval of this amendment) \*\*, provide the Regional Board with a list of program participants, organized by subwatershed ("drainshed").
- By (insert the date that corresponds to 90 days following State Board approval of this amendment) \*\*, submit the ICFB Watershed Program Plan to the Regional Board. The Plan should (1) identify measurable environmental and programmatic goals; (2) describe aggressive, reasonable milestones and timelines for the development and implementation of TMDL outreach plans; (3) describe aggressive, reasonable milestones and timelines for the development of sub-watershed ("drainshed") plans; (4) describe a commitment to develop and implement a tracking and reporting program.
- Submit semi-monthly reports to the Executive Officer that describe the progress of each of the subwatershed groups, any technical assistance workshops that are planned or were conducted, and any other pertinent information.

### b. ICFB TRACKING AND REPORTING PROCEDURES

The Imperial County Farm Bureau should also:

- By (insert the date that corresponds to 120 days following State Board approval of this amendment), submit a plan describing the process and procedures for tracking and reporting implementation of BMPs (and other proven management practices) and BMP performance to the Regional Board's Executive Officer.
- Implement the tracking and reporting procedures.
- Submit semi-monthly written reports assessing trends in the data and level of adoption of the process and procedures throughout each of the sub-watersheds ("drainsheds") to the Executive Officer.
- Submit a yearly summary report to the Executive Officer by 15<sup>th</sup> of February of each year.

### 1.3.2 UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

The Regional Board supports efforts of the University of California Cooperative Extension to provide interested growers information on sediment control BMPs, implement projects qualitatively assessing BMP performance, and develop farm water quality planning programs.

### 1.3.3 NRCS

The Regional Board recommends that the NRCS require control of irrigation-induced erosion as part of the Farm Plans developed under the Environmental Quality Incentives Program (EQIP) or other federal grant programs.

## VI. ACTIONS OF OTHER AUTHORITIES

**Page 6-3, edit "B. COMPLIANCE MONITORING" so it reads as follows:**

### **B. COMPLIANCE MONITORING**

#### 1. Regulated Facilities

~~Under this task, data is~~ Data from facilities with waste discharge requirements, including NPDES permits, are collected and used to determine compliance with waste discharge requirements and receiving water standards and to support enforcement actions...

**Page 6-3, in between the first and second paragraphs under "B. COMPLIANCE MONITORING", add the following heading:**

---

<sup>\*\*</sup> Note: Upon State approval (i.e., approval by the Regional Board and the State Water Resources Control Board), this parenthetical "formula" will be replaced by the date certain, based on the date of approval.



## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 13 of 14  
04-04-01 DRAFT

### 1. Recommended Biomonitoring (Toxicity Monitoring) Programs

**Page 6-4, following the last paragraph under "B. COMPLIANCE MONITORING", add the following:**

### 2. New River Pathogen TMDL

### 3. Alamo River Sedimentation/Siltation TMDL

#### 3.1 Compliance Assurance and Enforcement

As provided in the State Board's Water Quality Enforcement Policy, prompt, consistent, predictable, and fair enforcement are necessary to deter and correct violations of water quality standards, violations of the California Water Code, and to ensure that responsible parties carry out their responsibilities for meeting the TMDL allocations. This is particularly necessary to adequately deal with those responsible parties who fail to implement self-determined or regulatory-encouraged sediment control measures, which are essentially the cornerstone of the State's NPS Program. To this end, the Regional Board may use, as the circumstances of the case may warrant, any combination of the following:

- Implementation and enforcement of Section 13267 of the California Water Code to ensure that all responsible parties submit, in a prompt and complete manner, the Water Quality Management Plan defined in Chapter 4, Section V(B)(1.1.1).
- Consideration of adoption of waste discharge requirements, pursuant to Section 13263 of the California Water Code, as appropriate (i.e., for any responsible party who fails to implement voluntary or regulatory-encouraged sediment controls).
- Consideration of adoption of an enforcement orders pursuant to Section 13304 of the California Water Code against any responsible party who violates Regional Board waste discharge requirements and/or fails to implement voluntary or regulatory-encouraged sediment control measures to prevent and mitigate sediment pollution or threatened pollution of surface waters.
- Consideration of adoption of enforcement orders pursuant to Section 13301 of the California Water Code against those who violate Regional Board waste discharge requirements and/or prohibitions.
- Consideration of Administrative Civil Liability Complaints, as provided for by the California Water Code, against any responsible party who fails to comply with Regional Board orders, prohibitions, and requests.
- Consideration of adoption of referrals of recalcitrant violators of Regional Board orders and prohibitions to the District Attorney or Attorney General for criminal or civil prosecution, respectively.

From the standpoint of measuring progress, any cropland discharge with a concentration of suspended solids, measuring more than 375 mg/l or corresponding 268 NTU for turbidity would be considered unsatisfactory. Further, in assessing the status of compliance with Load Allocations specified in Table No. 4-1 of any responsible party who is in either Tier I or Tier II, the Regional Board shall consider, in addition to water quality results, the degree to which the responsible party has implemented, or is implementing, sediment control measures. In the absence of true progress the Regional Board directs the Executive Officer to draft requirements that will fulfill the sediment control measures.

#### 3.2. Monitoring and Tracking

Tracking TMDL and monitoring water quality progress, and modifying TMDLs and implementation plans as necessary to ensure attainment of water quality standards are important to address uncertainty that may exist in aspects of TMDL development, oversee TMDL implementation to ensure that implementation is being carried out, and to ensure that the TMDL remains effective, given changes that may occur in the watershed after the TMDL is developed. (All monitoring activities are contingent on funding through fund-source specific workplans.)

- **Water Quality Monitoring and Assessment**

Regional Board water quality monitoring activities for the Alamo River Sedimentation/Siltation TMDL Monitoring and Tracking Program shall be conducted pursuant to a Quality Assurance Project Plan for the Alamo River (QAPP-AR). The QAPP-AR shall: (1) include a sufficient number of sampling stations along the Alamo River to determine progress towards compliance with the TMDL and overall water quality improvement; (2) provide for monthly monitoring of flow,

## ATTACHMENT 2

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 14 of 14  
04-04-01 DRAFT

field turbidity, laboratory turbidity, total suspended solids in the river; and (3) provide for quarterly monitoring of DDT and DDT metabolites in the river's water column.

- **TMDL Implementation Tracking**

Implementation Tracking Plan:

Implementation of sediment control activities shall be tracked by Regional Board staff and shall be reported to the Regional Board at least yearly.

- **Assessment and Reporting**

On a yearly basis, the Regional Board staff will prepare a report assessing compliance with the TMDL Goals and Milestones. In the report, staff will assess the following:

- Water quality improvement (in terms of total suspended sediments, total sediment loads, DDT and metabolites, total phosphate)
- Trends in BMP implementation
- BMP effectiveness/performance/ and costs
- Whether milestones were met on time or at all. If milestones were not met, provide a discussion of the reasons, and a recommendation
- Level of compliance with measures and timelines agreed to in Program Plans and associated time schedules.
- Level of compliance with measures and timelines agreed to in Drainshed Plans.

- **Regular Review**

The Regional Board will hold public hearings at least every three years to review the effectiveness and progress of the sediment control program. At these hearings, it is proposed that the Regional Board consider:

- Monitoring results to date
- Progress toward attainment of milestones
- Changes or trends in implementation of BMPs
- Modification/addition of management practices for the control of sediment discharges
- Revision of TMDL components and/or development of site-specific water quality objectives.

The first public hearing will be scheduled by no later than three years after the date following State Board approval of this Basin Plan amendment.

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 1 of 50

### ATTACHMENT 3

#### CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD COLORADO RIVER BASIN REGION

#### CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS

**Amendment to the  
California Regional Water Quality Control Plan for the  
Colorado River Basin Region (Basin Plan)  
to Establish the  
Alamo River Sedimentation/Siltation Total Maximum Daily Load**

The California Regional Water Quality Control Board, Colorado River Basin Region (hereinafter referred to as the Regional Board) is the Lead Agency for evaluating the environmental impacts of the proposed amendment to the *Water Quality Control Plan for the Colorado River Basin Region (Basin Plan)*, to incorporate an Alamo River Sedimentation/Siltation Total Maximum Daily Load. The Secretary of Resources has certified the basin planning process as exempt from certain requirements under the California Environmental Quality Act (CEQA), including preparation of an initial study, a negative declaration and environmental impact report [Title 14, California Code of Regulations, Section 15251(g)]. As this proposed amendment to the *Basin Plan* is part of the basin planning process, the amendment is considered 'functionally equivalent' to an initial study, a negative declaration and an environmental impact report. Included in the 'functionally equivalent' amendment are: Alamo River Sedimentation/Siltation Total Maximum Daily Load; Draft Resolution; Basin Plan Amendment; CEQA Checklist; Natural Environment Study; and, Economic Analysis of the Alamo River Sedimentation/Siltation TMDL.

Any regulatory program of the Regional Board certified as functionally equivalent, however, must satisfy the documentation requirements of Title 23, California Code of Regulations, Section 377(a), which requires an Environmental Checklist with a description of the proposed activity, and a determination with respect to significant environmental impacts. This information is presented below.

**Project Title:**

Amendment to the California Regional Water Quality Control Plan for the Colorado River Basin Region (Basin Plan) to establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load (TMDL)

**Lead agency name and address:**

California Regional Water Quality Control Board, Colorado River Basin Region  
73-720 Fred Waring Drive, Suite 100  
Palm Desert, CA 92260

**Contact person and phone number:**

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 2 of 50

April 16, 2001

Teresa Newkirk, Environmental Specialist III, (760) 776-8931

Project location:

Colorado River Basin Region (southeastern California), Imperial County

Project sponsor's name and address: (see lead agency)

General plan designation: Not Applicable

Zoning: Not Applicable

Description of project:

The Water Quality Control Plan for the Colorado River Basin Region (also known as Basin Plan) designates beneficial uses of waterbodies, establishes water quality objectives for the protection of these beneficial uses, and outlines a plan of implementation for maintaining and enhancing water quality. The existing Basin Plan includes narrative water quality objectives that apply to sediment. The objectives are being violated and the beneficial uses are being impaired in the Alamo River by excessive delivery of sediment from farmland and agricultural drains in Imperial County. The proposed Basin Plan amendment will establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load (TMDL and an implementation plan (TMDL Implementation Plan) to address the sediment-impairment of the river. The TMDL Implementation Plan requires that parties responsible for the impairment implement best management practices (BMPs) in accordance with a time schedule to address the impairment.

Surrounding land uses and setting:

The Basin Plan is applicable to the Colorado River Basin Region of California, as set forth in the California Water Code, Division 7, Section 13200(i). The region is located in southeastern California. The amendment applies to agricultural land in Imperial Valley.

Other public agencies whose approval is required: (e.g., permits, financing approval, or participation agreement.) None

#### ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Aesthetics                      | <input checked="" type="checkbox"/> Agriculture Resources   | <input type="checkbox"/> Air Quality                       |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Geology/Soils                     |
| <input type="checkbox"/> Hazards & Hazardous Materials   | <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning                 |
| <input type="checkbox"/> Mineral Resources               | <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population                        |
| <input type="checkbox"/> Public Services                 | <input type="checkbox"/> Recreation                         | <input checked="" type="checkbox"/> Transportation/Traffic |

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 3 of 50

☐

Utilities/Service Systems

☐

Mandatory Findings of Significance

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 4 of 50

### I. EVALUATION OF ENVIRONMENTAL IMPACTS

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
1. <u>AESTHETICS</u> – Would the project:				
a) Have any substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. <u>AGRICULTURE RESOURCES</u> -- In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
DRAFT 4/16/01

Page 5 of 50

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
--	--------------------------------	---------------------------------------	------------------------------	-----------

3. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon the make the following determinations. Would the project:

- |   |                          |                          |                                     |                                     |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) Expose sensitive receptors to substantial pollutant concentrations?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

4. BIOLOGICAL RESOURCES -- Would the project:

- |   |                          |                                     |                                     |                          |
|---|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
DRAFT 4/16/01

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>5. CULTURAL RESOURCES -- Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>6. GEOLOGY AND SOILS -- Would the project:</b>				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
DRAFT 4/16/01

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>7. HAZARDS AND HAZARDOUS MATERIALS --</b> Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
DRAFT 4/16/01

Page 8 of 50

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support the existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
DRAFT 4/16/01

Page 9 of 50

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. LAND USE AND PLANNING -- Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
DRAFT 4/16/01

Page 10 of 50

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 11. NOISE -- Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 12. POPULATION AND HOUSING -- Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

Page 11 of 50

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
DRAFT 4/16/01

Page 12 of 50

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<b>13. PUBLIC SERVICES --</b>				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>14. RECREATION --</b>				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>15. TRANSPORTATION / TRAFFIC -- Would the project:</b>				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
DRAFT 4/16/01

Page 13 of 50

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16. UTILITIES AND SERVICE SYSTEMS -- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
DRAFT 4/16/01

Page 14 of 50

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17.. MANDATORY FINDINGS OF SIGNIFICANCE --				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 15 of 50

### II. DETERMINATION

On the basis of this initial evaluation:

\_\_\_\_\_ I find that the proposed Basin Plan amendment could not have a significant effect on the environment.

X \_\_\_\_\_ I find that the proposed Basin Plan amendment could have a significant adverse effect on the environment. However, there are feasible alternatives and/or feasible mitigation measures that would substantially lessen any significant adverse impact. These alternatives are discussed in the attached written report.

\_\_\_\_\_ I find that the proposed Basin Plan amendment may have a significant effect on the environment. There are no feasible alternatives and/or mitigation measures available which would substantially lessen any significant adverse impacts. See attached written report for a discussion of this determination.

\_\_\_\_\_  
PHIL GRUENBERG  
Executive Officer

\_\_\_\_\_  
Date

**ATTACHMENT 3.0 CEQA Checklist and discussion**

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

April 16, 2001

Page 16 of 50

**THIS PAGE INTENTIONALLY LEFT BLANK**

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 17 of 50

### ENVIRONMENTAL CHECKLIST DISCUSSION

The following discussions are grouped according to each of the major areas of the Environmental Checklist and cover the Potentially Significant Impact, Less Than Significant Impact With Mitigation, Less Than Significant Impact, No Impact categories, and Project Alternatives.

As explained in the CEQA Checklist, the discussion that follows is also intended to fulfill the requirements of California Code of Regulations Title 23, section 3777, subdivision (a)(1) through (3); Public Resources Code section 21159, subdivision (a)(1) through (3); and California Code of Regulations Title 14, section 15187, subdivisions (b) and (c)(1) through (3). More explicitly, this document provides an analysis of the reasonably foreseeable environmental impacts resulting from the implementation of the project. Where appropriate, the evaluation also includes an analysis of feasible reasonably foreseeable mitigation measures identified for those impacts; and an analysis of reasonably foreseeable alternative means of compliance with the requirements of this project, which would avoid or eliminate the identified impacts.

### PROJECT DESCRIPTION

The proposed project consists of an Amendment to the Water Quality Control Plan for the Colorado River Basin Region (hereafter "Basin Plan") that will establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load (TMDL). Also, and as required by Section 13242 of the Porter-Cologne Water Quality Act, the proposed amendment incorporates an implementation plan for the TMDL that includes: (a) a description of the actions to be taken to achieve the TMDL, including recommended actions; (b) proposed time schedules for actions to be taken, and (c) proposed surveillance to be implemented to measure compliance with the TMDL. The implementation plan for the TMDL is hereafter referred to as the "TMDL Implementation Plan." The TMDL can potentially affect up to 330,000 acres of farmland draining into the Alamo River.

The Amendment will require Imperial Irrigation District (IID), the agricultural discharger in the Alamo River watershed to implement sediment-control measures in the form of Best Management Practices (BMPs). It also requires the U.S. Section of the International Boundary and Water Commission (IBWC) to submit proposed measures to prevent discharges of wastes from Mexico from violating the TMDL. For the purposes of this analysis of potential environmental impacts, the "proposed project" includes the amendment, the reasonably foreseeable actions (i.e., BMPs) to be implemented by responsible parties to comply with the TMDL, and the TMDL surveillance actions.

#### Area/Waterbody Description

The Alamo River is the main tributary of the Salton Sea, California's largest inland surface water body. The river has its headwaters in Mexico 0.6 miles south of the International Boundary with the United States, and travels roughly 60 river miles through Imperial County before it empties into

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

April 16, 2001

Page 18 of 50

the southeast corner of the Salton Sea, just east of the unincorporated community of Niland. This area is characterized by its arid environment (about 3 inches per year average precipitation). Imperial County covers approximately 4,597 square miles (2,942,080 acres) (Imperial County, 1993.). About 50% of County lands are undeveloped and under the jurisdiction and ownership of the federal government. Of the developed acreage, approximately 480,000 acres are irrigated lands for agricultural purposes (Annual Inventory of Areas Receiving Water Years 1998, 1997, 1996. Imperial Irrigation District, 1999). Developed areas (e.g., cities, communities, and support facilities) occupy less than 1% of the land within the county. The Salton Sea covers about 7% of the County's area. The biological setting is further described in the discussion of potential impacts on Biological Resources, below.

### **Reasons for the Proposed Project**

A TMDL is defined as the maximum amount of a pollutant that a body of water can receive and still meet water quality standards (Federal Water Pollution Control Act Section 303 (d) et seq.). The Basin Plan establishes water quality standards for waterbodies within the region by designating beneficial uses for waterbodies within the Region and establishing water quality objectives for the protection of these beneficial uses. The Basin Plan also outlines a plan of implementation for maintaining and enhancing water quality. The existing Basin Plan includes narrative sediment and turbidity water quality objectives to protect beneficial uses for the Alamo River. The proposed amendment quantifies the objectives for the TMDL.

Pursuant to Section 303(d) of the Clean Water Act (33 § USGA 1313d), in 1998 the Regional Board adopted a list of impaired waters. The list (303(d) List) was approved by the State Water Resources Control Board (State Board) the same year and identifies the Alamo River as water quality limited, in part, because sediment concentrations violate the water quality standards (WQS) established by the Regional Board to protect the beneficial uses of the river. Excess delivery of suspended sediment to the Alamo River from agricultural drains operated and maintained by the Imperial Irrigation District (IID) and from farmland in the Imperial Valley exceeds Basin Plan's water quality objectives for sediment and turbidity. The main sources of suspended sediment in the drains are agricultural return flows and operation and maintenance of the drainage system.

Section 303 (d)(A)(1) of the Clean Water Act (CWA) requires the California Regional Board to establish TMDLs for those pollutants causing the impairments to ensure that impaired waters attain their beneficial uses. Therefore Regional Board staff has developed, for consideration of adoption by the Regional Board, the Draft Sedimentation/Siltation TMDL, the TMDL Implementation Plan, and a proposed Amendment to the Basin Plan to incorporate the key components of the TMDL.

The proposed Basin Plan Amendment:

Updates references to the State's Nonpoint Source Pollution Control Program.

Includes the elements of the Regional Nonpoint Source Control Program.

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 19 of 50

Deletes dated information that is no longer accurate.

Establishes a site-specific water quality objective for the Alamo River of 200 milligrams total suspended solids per liter of water for the entire U.S. reach of the river.

Adds a Section for the proposed TMDL that:

Summarizes the “technical” TMDL elements, including the Problem Statement, Numeric Target, Source Analysis, Margin of Safety, Seasonal Variation/Critical Condition information, Loading Capacity, and Allocations;

Establishes interim numeric targets;

Designates Responsible Parties and Proposed Management Actions;

Lists available sediment-control Best Management Practices;

Describes the recommended actions for cooperating agencies;

Describes compliance assurance and enforcement activities for the proposed TMDL;

Describes Regional Board monitoring, tracking, and assessment activities to monitor the implementation of the proposed TMDL;

Describes the public reporting activities for the proposed TMDL; and

Describes the Regional Board review process for the proposed TMDL.

#### **TMDL Implementation Plan**

The Regional Board must adopt an implementation plan for achieving water quality objectives (CWC § 13242). The TMDL Implementation Plan fulfills the regulatory and legislative requirements of a water quality implementation plan and is consistent with state water quality control policies. Also, the Regional Board must identify methods available for compliance with the TMDL (CWC § 13241). Consistent with this requirement, the TMDL Implementation Plan contains a list of BMPs that can be used for compliance with the TMDL. BMPs are defined as "...methods, measures, or practices selected by an agency to meet its nonpoint source control needs. BMPs include but are not limited to structural and nonstructural controls and operation and maintenance procedures. BMPs can be applied before, during, and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters..." (Title 40, Code of Federal Regulations, Part 130.2).

In developing the TMDL, two lists of BMPs for reducing the amount of sediment discharged from agricultural sources in the Imperial Valley were created. The lists are the basis for the BMPs contained in the proposed Amendment and were generated by the TMDL Technical Advisory

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 20 of 50

Committee, and the University of California Cooperative Extension. Most sediment-control BMPs work by slowing the velocity of irrigation water runoff and/or making the field or drain more resistant to erosive forces. The listed BMPs are not prescriptive because California law prohibits the Regional Board from specifying design, location, type of construction, or particular manner in which compliance may be had (CWC § 13360). Hence, the Basin Plan amendment allows the responsible party to implement other non-listed BMPs, so long as law does not prohibit the BMPs.

### **Likely TMDL BMPs**

Based on the foregoing, at the time of this analysis, it is uncertain what BMPs IID may implement to mitigate the water quality impact caused by its dredging operations and ensure compliance with this proposed TMDL. Options for IID, include reducing the amount and frequency of dredging and implementing appropriate seasonal dredging restrictions to avoid impacts on sensitive resources (e.g., the Alamo River Delta). These measures would not result in any significant environmental impacts that would require mitigation measures. Nevertheless, because of the uncertainty, the proposed Basin Plan Amendment requires IID to submit a sediment-control and monitoring program for its drains and the Alamo River Delta. The program, in part, must identify proposed control measures and a time schedule for implementation. The IID is a “Public Agency” as defined by state law (PRC 21063). To the degree that its proposed measures are not exempt from CEQA and/or fall outside the scope of the analysis presented herein, the IID is expected to act as a Lead Agency for its projects and comply with the CEQA requirements for its projects (PRC 21159.2, State CEQA Guidelines 15189).

Also, it is uncertain what measures the USEPA and/or the U.S. Section of the International Boundary and Water Commission (IBWC) may need to implement to assure that discharges of wastes from Mexico into the Alamo River at the International Boundary with Mexico do not violate the allowable silt/sediment load for the boundary. It is unlikely that it will implement controls within California (i.e., Imperial County) because it has consistently indicated that pollution from Mexico is best addressed through implementation of measures/controls in Mexico. Under this scenario, a CEQA analysis of the control measures is not required, but the IBWC may need to satisfy the requirements of National Environmental Policy Act of 1969 (PRC Section 21080, State CEQA Guidelines 15189).

Similarly, there is some uncertainty regarding the exact number of the BMPs to be undertaken by the farmers pursuant the Amendment. However, a qualitative analysis of the cost, effectiveness, and anticipated local acceptability of the recommended BMPs identifies the BMPs that are likely to be widely implemented by farmers/growers/landowners for TMDL compliance. The analysis is based on the following premises:

1. The agricultural dischargers are likely to select the BMPs that are the most affordable to implement.
2. The agricultural dischargers are likely to select the BMPs that are effective at reducing sediment loading to the Alamo River, and

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 21 of 50

3. The agricultural dischargers are likely to implement BMPs that are feasible to implement and do not involve the risk of significantly harming crop yields or farm soils.

If a BMP is not affordable, not effective, or not accepted by the farming community, it is unlikely that the BMP will be implemented. BMP affordability criteria were based on the cost analyses contained in the List of Agricultural Best Management Practices for the Imperial Valley (Jones and Stokes, 1996) and the Alamo River Sediment TMDL Economic Assessment (SWRCB, 2000). Costs were considered low in this analysis if they were rated as low in the List of Agricultural Management Practices for the Imperial Valley, or were determined to cost less than 1% of per-acre gross production crops in the Sediment TMDL Economic Assessment. BMP effectiveness was assessed using the effectiveness ratings contained in the List of Agricultural Best Management Practices for the Imperial Valley, recommendations of the UC Cooperative Extension and the Silt TMDL Technical Advisory Committee, and best professional judgment. Local anticipated acceptability was determined based on correspondence and other communications with Imperial Valley Farmers, the Silt TMDL Technical Advisory Committee, and the Imperial Irrigation District; and whether a BMP has been or is being used by local farmers. Table 1 below summarizes the results of this analysis.

Table 1: BMP Evaluation

Best Management Practice	Is the BMP Cost Effective?	Is BMP effective in reducing Silt?	Anticipated Acceptability	Is widespread implementation likely?
Maintenance of Field Drainage Structure (Imperial Irrigation District Regulation No. 39)	Yes <sup>e</sup>	Yes <sup>e</sup>	Yes	Yes
Tailwater Drop Box with Raised Grade Board	Yes <sup>e</sup>	Yes <sup>e</sup>	Yes	Yes
Improved Drop Box with Widened Weir and Raised Grade Board	Yes <sup>e</sup>	Yes <sup>e</sup>	Yes	Yes
"Pan Ditch" - Enlarged Tailwater Ditch Cross Section	Yes	Yes	Yes	Yes
Tailwater Ditch Checks or Check Dams	Yes <sup>he</sup>	Yes <sup>hj</sup>	Yes	Yes
Irrigation Water Management	Yes <sup>chi</sup>	Yes <sup>ih</sup>	No	No
Field to Tailditch Transition	Yes	Yes	Yes	Yes
Furrow Dikes (aka C-Taps)	Yes <sup>e</sup>	Yes <sup>af</sup>	Yes	Yes
Filter Strips	Yes <sup>chk</sup>	Yes <sup>hjk</sup>	Yes	Yes
Reduced Tillage	Yes <sup>hk</sup>	No <sup>chjk</sup>	Yes	No
Channel Vegetation/	Yes <sup>e,h,i</sup>	Yes <sup>h,i</sup>	Yes	Yes

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

April 16, 2001

Page 22 of 50

Best Management Practice	Is the BMP Cost Effective?	Is BMP effective in reducing Silt?	Anticipated Acceptability	Is widespread implementation likely?
Grassed Waterway				
Irrigation Canal or Lateral	Yes	Yes <sup>l</sup>	Yes	Yes
Irrigation Land Leveling	No <sup>g,i,j</sup>	Yes <sup>h</sup>	Yes	No
Sedimentation Basis	No <sup>h</sup>	Yes <sup>b,h</sup>	Yes	No
Sprinkler Irrigation	No <sup>e,h,i</sup>	Yes <sup>h,i</sup>	Yes	No
Drip Irrigation	No <sup>g,h,i,j</sup>	Yes <sup>h,i</sup>	Yes	No
<b>Notes:</b> a = Baumhardt et al., 1993 b = Brown et. al .1981 c = Carter and Berg, 1991 d = IID, 1978 e = Jones and Stokes Associates, 1996 f = Kranz and Eisenhauer, 1990 g = O'Halloran 1992 h = USDA, Soil Conservation Service 1992 i = USDA, Soil Conservation Service 1989 j = USDA, Soil Conservation Service 1979 k = USEPA, 1993 L = USDA, 1996				

Based on this analysis, the BMPs likely to have widespread implementation by farmers for the purpose of complying with this TMDL are: maintenance of field drainage structure (Imperial Irrigation District regulation No. 39); tailwater drop box with raised grade board; improved drop box with widened weir; raised grade board "pan ditch"; enlarged tailwater ditch cross section; tailwater ditch checks; check dams field to tailditch transition furrow dikes (c-taps); filter strips; and, channel vegetation/grassed waterway. The subsequent environmental analysis in this document is based on the potential widespread implementation of these BMPs throughout the Alamo River Watershed.



## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

April 16, 2001

Page 23 of 50

### EVALUATION OF ENVIRONMENTAL IMPACTS DISCUSSION

#### I. Aesthetics

Would the project:

a) Have any substantial adverse effect on a scenic vista?

**No impact.** These agricultural sites are not considered to be sensitive with respect to scenic resources.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

**No impact.** There are no impacts expected in relationship to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

**No impact.** It is not expected that the existing visual character or quality of the site and its surroundings will be substantially degraded by the action.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

**No impact.** There are no new sources of substantial light or glare which would adversely affect day or nighttime views in the area.

#### II. Agriculture Resources

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

**Less Than Significant Impact.** Out of the 16 BMPs recommended by the Silt TMDL TAC, the University of California Cooperative Extension, and Jones and Stokes Associates, only 3 BMPs would require the conversion of any amount of land: construction of filter strips, widening of tailwater ditches, and sedimentation basins. As stated in a previous paragraph, sedimentation basins are not likely to be implemented for compliance with the TMDL.

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

April 16, 2001

Page 24 of 50

The estimated maximum size of a filter strip designed to service 80 acres of irrigated land (i.e., a 2,900-foot by 1,200-foot furrow field) is approximately 20 feet wide (Sojka, 1996). The typical tailwater ditch in Imperial County is about 5 feet wide. Therefore, a filter strip would increase the existing typical tailwater ditch by 15 feet in width. This increase represents about one acre ( $15 \text{ ft} \times 2,900 \text{ ft} = 43,500 \text{ ft}^2 < 1 \text{ acre}$ ) per 80-acre field. Similarly, the typical tailwater ditch for an 80-acre field would have to be widened by about 10 feet for sediment-control (i.e., a typical widened tailwater ditch is 15 feet wide) (Cocke, 2001). This increase is about 0.67 acres.

Out of the total farmable lands in the Alamo River watershed, approximately 170,323 acres are planted on any given year with alfalfa and sudan grass (UCCE, 2000). The filter strip for these crops would consist of the same crop and, therefore, there is no conversion of land to non-agricultural use (i.e., the filter strip can be harvested) if filter strips are used for this acreage. Subsequently, there is no adverse impact on this acreage.

Filter strips for the remaining 159,677 acres could result in the conversion of about 1,993 acres ( $(1/80) \times 159,677 = 1,993 \text{ acres}$ ) to a "non-agricultural use". On the other hand, widened tailwater ditches for this acreage could result in the conversion of about 1,329 acres ( $((0.67/80) \times 159,667 = 1,329 \text{ acres})$ ). Hence, a combination of filter strips and widened tailwater ditches as BMPs for the 159,677 acres could result in the conversion of 1,661 acres ( $((1,993+1,329)/2 = 1,661 \text{ acres})$  of prime agricultural land to a non-productive use, which equates to 0.50% of all farmable land in the Alamo River watershed, and, therefore, is considered to be less than significant. In practice, this amount of land will most likely not be converted considering that a substantial number of responsible parties will choose to implement those BMPs that are economically feasible (e.g., tailwater drop box with raised grade board, improved drop box with widened weir and raised grade board, and tailwater ditch checks).

b) Conflict with existing zoning for agricultural use, or Williamson Act contract?

**No Impact.** The BMPs listed in this project would not conflict with any existing zoning for agricultural use, or the California Land Conservation Act known as the Williamson Act.

c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

**No impact.** There is no evidence that these BMPs will involve any other changes in the existing environment that could result in the conversion of farmlands to non-agricultural use.

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 25 of 50

### III. Air Quality

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

**No Impact.** Neither the Basin Plan amendment, a regulatory action in itself, nor the implementation of BMPs for compliance with the proposed TMDL will conflict with or obstruct the implementation of any air quality regulatory action or plan.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

**Less Than Significant Impact.** Particulate emissions and ozone in Imperial County exceed Federal and California State Ambient Air Quality Standards. Reportedly, particulate emissions for the most part are due to meteorological conditions, minimal rainfall and dry soil, but they are also created by extensive disturbances of dry soil from agricultural and off-road vehicles. The presence of ozone and the exceedance of the Federal and State ozone standards are the result of transfer pollutants from the South Coast Air Basin, industrial activities in the City of Mexicali, Mexico, where pollutants blow into the Imperial Valley, and from nocturnal air stagnation and ground-based temperature inversions. Inversions lead to poor air quality at night that continues over into early morning.

The enlargement of tailwater ditch cross-sections; the installation of filter strips (e.g., Fiber Mat), sprinkler irrigation systems, drip irrigation systems, and pump-back systems; and the planting a channel with vegetation for compliance with the proposed TMDL may involve the limited use (e.g., one-time use or once-per-year use) of heavy-duty agricultural and construction equipment (e.g., tractors, caterpillars, backhoes, etc.) that are sources of gasoline/diesel byproduct emissions. Similarly, the operation and maintenance of these BMPs may also involve the limited use of heavy-duty agricultural and construction equipment. But as discussed in the previous section, it is unlikely that sedimentation basins, pump-back systems, and pressurized systems will be used by any significant number of farmers for the purpose of compliance with the proposed TMDL because of the cost involved in installing, operating and maintaining the systems. In general the BMPs themselves are not sources of emissions. Further, the Imperial County Air Pollution Control District (ICAPCD) reports that the equipment used for construction and O&M meets emission standards and is exempted from ICAPCD permitting requirements. Therefore, emissions from vehicles used to install, construct, or otherwise operate and maintain the BMPs and the BMPs themselves are not expected to result in significant air quality impacts. The equipment may, however, disturb relatively small areas of farmland with dry soil during installation or O&M of the BMPs. This may result in emissions of particulates (i.e., dust), which by themselves are not considered significant, but they may contribute to a violation of particulate standards. Such contribution is considered to be less than significant.

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

April 16, 2001

Page 26 of 50

- c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

**Less Than Significant Impact.** The contribution attributable to the installation/construction and O&M of the BMPs is not considered cumulatively considerable and, as a consequence, is less than significant.

- d) Expose sensitive receptors to substantial pollutant concentrations?

**No Impact.** The amount of particulate emissions associated with the installation/construction and O&M of the BMPs will not expose sensitive receptors to any substantial pollution concentrations.

- e) Create objectionable odors affecting a substantial number of people?

**No Impact.** Objectionable odors are not expected to occur with the implementation of the BMPs.

### ÉV. Biological Resources

Would the project:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

**Less Than Significant Impact With Mitigation.** The agricultural drains tributary to the Alamo River provide beneficial plant and wildlife habitat. A wildlife use survey (Setmire, 1995) found that agricultural drains in the Alamo River watershed support valuable vegetation cover and are used as habitat by numerous sensitive bird species, including the endangered Yuma clapper rail. While birds are the most diverse group utilizing the agricultural drains, other groups are represented as well. The food web for the drains also includes benthic macroinvertebrates, various macroinvertebrates found in the water column, insects, fish, and reptiles. Implementation of BMPs to reduce the amount of silt entering the Alamo River from agricultural return flows will have a positive impact upon biological resources. Silt deposition can result in smothering of some benthic (bottom dwelling) species and burying and smothering of eggs and larvae of fish and aquatic invertebrates. Reduction of the amount of sediment entering the river will have a beneficial impact on those aquatic communities. Implementation of BMPs that decrease sediment loading to the Alamo River are anticipated to have a positive impact on the river's biological resources due to the lower levels of pesticides carried into the river when the sediment load is decreased. Sediment from the agricultural drains serves as a carrier for pesticides such as DDT, DDT metabolites, and

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 27 of 50

toxaphene. These pesticides accumulate in the sediments and undergo biomagnification through the aquatic food chain. Fish and birds collected from the Alamo River watershed have been found to have high tissue concentrations of these pesticides. Alamo River fish contain pesticide levels exceeding the National Academy of Science (NAS) and U.S Food and Drug Administration (FDA) action levels and are considered hazardous to the wildlife and people who consume them. Toxaphene is a known carcinogen, and like DDT, is an organochlorine pesticide (OCP). OCPs damage cells by disrupting important enzymic and biochemical processes. DDT is well documented to cause a reduction in the reproductive success of birds feeding on fish with high tissue levels of the pesticide (Bennett, 1998). Deleterious reproductive effects of DDT include decreased egg production, eggshell thinning (and thus, breakage), increased chick mortality, and decreased fledgling success. The endangered Yuma clapper rail is one of the species exposed to levels of DDE, a DDT metabolite, that are considered unsafe and is currently at an increased risk of adverse affects (Setmire et al, 1993).

However, sediment removal operations (dredging) at the Alamo River Delta and in other sensitive habitat areas along the Alamo River and the drains may cause reduction of habitat and sensitive species distribution. Implementation of BMPs to reduce sedimentation/siltation in the Alamo River, combined with continued dredging at the current level in the Alamo River Delta may result in removal of habitat utilized by the Yuma clapper rail (Bennett and Ohmart, 1978) and the brown pelican (Carol Roberts, personal communication, 2000). Yuma clapper rails are known to use stands of cattail and bulrush. Species of both cattail and bulrush occur along the edges of the Alamo River and in the Delta region. Paired clapper rails have been found using the stands of cattails along the Alamo River Delta. Brown pelicans are observed utilizing the mudflat habitat in the Delta.

#### **Mitigation Measures**

Reduction of dredging, as well as timing of dredging, in the delta region would minimize impacts on the species and habitat of concern. Also, it would mitigate on-going violations of the 5 mg/L dissolved oxygen (DO) WQO for the river. Dredging along the Salton Sea delta should be minimized to reduce the likelihood of indirect impacts to Yuma clapper rail, California black rail, burrowing owls, least bittern and sensitive habitat. Timing of dredging will be required to be out of nesting season (September-February).

To reduce this impact to a less than significant impact, and mitigate the DO violations, the proposed Basin Plan amendment will require the IID to submit a technical report pursuant to Section 13267 of the California Water Code describing the measures it proposed to take (e.g., decrease dredging) along with a monitoring program, to ensure that its overall drainage maintenance operations in the Alamo River Watershed do not result in the loss of habitat as a result of implementation of this TMDL and on-going violations of the DO WQO.

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

April 16, 2001

Page 28 of 50

- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

**Less Than Significant Impact.** Reduction of sediment may affect the Alamo River Delta and therefore the emergent wetland and beach areas. The impact to wetland and beach areas could be offset by changes in the current dredging of the river channel.

#### **Mitigation Measures**

Reduction of dredging, as well as timing of dredging, in the delta region would minimize impacts on the species and habitat of concern. Also, it would mitigate on-going violations of the 5 mg/L dissolved oxygen (DO) WQO for the river. Dredging along the Salton Sea delta should be minimized to reduce the likelihood of indirect impacts to Yuma clapper rail, California black rail, burrowing owls, least bittern and sensitive habitat. Timing of dredging will be required to be out of nesting season (September-February).

To reduce this impact to a less than significant impact, and mitigate the DO violations, the proposed Basin Plan amendment will require the IID to submit a technical report pursuant to Section 13267 of the California Water Code describing the measures it proposed to take (e.g., decrease dredging) along with a monitoring program, to ensure that its overall dredging operations in the Alamo River Watershed do not result in the loss of habitat as a result of implementation of this TMDL and on-going violations of the DO WQO.

- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

**Less Than Significant Impact.** Reduction of sediment may affect the Alamo River Delta and therefore the emergent wetland and beach areas. The impact to wetland and beach areas could be offset by changes in the current dredging of the river channel.

#### **Mitigation Measures**

Reduction of dredging, as well as timing of dredging, in the delta region would minimize impacts on the species and habitat of concern. Also, it would mitigate on-going violations of the 5 mg/L dissolved oxygen (DO) WQO for the river. Dredging along the Salton Sea delta should be minimized to reduce the likelihood of indirect impacts to Yuma clapper rail, California black rail, burrowing owls, least bittern and sensitive habitat. Timing of dredging will be required to be out of nesting season (September-February).

To reduce this impact to a less than significant impact, and mitigate the DO violations, the proposed Basin Plan amendment will require the IID to submit a technical report pursuant to Section 13267 of the California Water Code describing the measures it proposed to take (e.g., decrease dredging) along with a monitoring program, to ensure that its overall dredging operations in the Alamo River



### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

April 16, 2001

Page 29 of 50

Watershed do not result in the loss of habitat as a result of implementation of this TMDL and on-going violations of the DO WQO.

- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

**No impact.** No impacts are expected to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy ordinance?

**No impact.** No conflicts with any local policies or ordinances protecting biological resources are expected to occur.

- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

**No impact.** No conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan are expected to occur. Imperial Irrigation District (IID) is currently working with the U.S. Fish and Wildlife Service and the California Department of Fish and Game on a Habitat Conservation Plan to mitigate for impacts associated with the Colorado River Water Quantification Settlement Agreement.

## V. Cultural Resources

Would the project:

- a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

**No impact.** No impacts will occur to any historical resource as defined in §15064.5.

- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

**No impact.** No impacts will occur to any historical resource as defined in §15064.5.

- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 30 of 50

**No impact.** Implementation/construction of BMPs is expected to take place on farmland that has been under cultivation for at least the last 60 years and on existing agricultural drains, which do not involve or implicate any known historical, archeological, or paleontological resources, unique sites or unique geologic features.

**d) Disturb any human remains, including those interred outside of formal cemeteries?**

**No impact.** The proposed project will not result in any disturbance of human remains, including those interred outside of formal cemeteries.

## VI. Geology and Soils

Would the project:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss injury, or death involving:
  - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake
  - ii) Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
  - iii) Strong seismic ground shaking?
  - iv) Seismic-related ground failure, including liquefaction?
  - v) Landslides?

**Less Than Significant Impact.** Imperial Valley is one of the most active seismic zones in North America, with numerous historic earthquakes. The Valley experiences continuous low-to-moderate level seismic activity. The great San Andreas Fault lies roughly parallel to and less than 10 miles northeast of the Alamo River. A magnitude 8 on the Richter scale, earthquake might occur once per 160 years, a magnitude 7 every 13 years, a magnitude 4 every 10 years, and a magnitude 3 about ten to twenty times per year. The area had two magnitude 6 quakes in 1987. Additionally, some areas in the Valley have a perched groundwater table. The combination of loose, fine sediments, high groundwater, and a potential for seismic activity create a potential for soil liquefaction. Therefore, the potential for structural failure is inherently significant for the area. Yet, the BMPs that are likely to be implemented for compliance with the proposed TMDL will take place primarily on farmland that has been under continued cultivation for over 60 years. They are not individually and cumulatively significantly different than current agricultural practices (e.g., preparing the land for planting) and, therefore, will not result in any significant soil disturbances that would result in the rupture of any known fault, any significant seismic ground shaking, seismic-related ground failure, landslides, subsidence, liquefaction, lateral spreading or collapse.

**b) Result in substantial soil erosion or the loss of topsoil?**



### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 31 of 50

**No Impact.** The objective of the proposed project is to control excess delivery of silt and sediment into the Alamo River, which come primarily from irrigated agricultural fields. Implementation of BMPs for compliance with the TMDL will actually reduce soil erosion and the loss of topsoil.

- c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

**No Impact.** Implementation of BMPs is expected to take place primarily on farmland that has been under continued cultivation for over 60 years. The BMPs that are likely to be implemented pursuant to this project are not structures that would affect or disturb soils to any significant degree such that the soils would become unstable, result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

**No Impact.** Implementation of BMPs is expected to take place primarily on farmland that has been under continued cultivation for over 50 years. They would not affect any soil to any significant degree such that they would create a risk to life or property.

- e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

**No Impact.** The proposed project does not involve septic tanks or alternative disposal systems.

## VII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

**No Impacts.** No hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials will occur.

- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

**No Impacts.** No hazards to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment will occur.

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

April 16, 2001

Page 32 of 50

- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

**No Impacts.** No hazardous emissions, hazardous materials, substances or wastes within one-quarter mile of an existing or proposed school will occur with this Basin Plan amendment.

- d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

**No Impacts.** Implementation and construction of BMPs do not involve hazardous materials and are expected to take place on existing farmland and drains, which are not identified as hazardous materials sites.

- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

**No Impacts.** Implementation and construction of BMPs are expected to take place on existing farmland and drains, not on an airport.

- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

**No Impacts.** Implementation and construction of BMPs are expected to take place on existing farmland and drains, not on a airstrip.

- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

**No Impacts.** Implementation and construction of BMPs are expected to take place on existing farmland and drains, and will not interfere with an adopted emergency response plan or emergency evacuation plan.

- h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

**No Impacts.** Implementation and construction of BMPs are expected to take place on existing farmland and drains, and are expected to have no significant risk of loss, injury or death involving wildland fires.

## VIII. HYDROLOGY AND WATER QUALITY

Would the project:

- a) Violate any water quality standards or waste discharge requirements?

For the purpose of this subsection, impacts are considered significant if they result in violation of water quality standards or waste discharge requirements. A water quality standard for a water body is defined as a particular beneficial use of the water body and the water quality objective(s) (WQOs) necessary to protect the use. WQOs can be numeric (e.g., the 4-day average of 5 parts per billion (ppb) objective for selenium for the Alamo River and agricultural drains) or narrative (e.g., “the suspended sediment load and suspended sediment discharge rate to surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses”). The Regional Board has not adopted numeric WQOs for nutrients for surface waters within the Alamo River Watershed or for the Salton Sea. The Regional Board’s Clean Water Act Section 303(d) List of Impaired Surface Water Bodies (303(d) list) documents the current water quality standards being violated for the Region’s surface waters. Table 3, is based on the Regional Board’s 303(d) List and shows the Salton Sea and the surface waters within the Alamo River Watershed that are not meeting water quality standards, and the pollutants causing the impairments.

Table 3 – Impaired Surface Waters within the Alamo River Watershed

Waterbody Not Meeting WQS	Pollutants of Causing Impairments
Imperial Valley Agricultural Drains	Sediment, Pesticides, Selenium
Alamo River	Sediment, Pesticides, Selenium
Salton Sea	Selenium, Salt, Nutrients

Provisions of the California Water Code authorize the Regional Board to adopt waste discharge requirements (WDRs) for discharges of wastes/pollutants from point and nonpoint sources of pollution into the surface waters within the region. WDRs for discharges from point sources into regional surface waters, which are also national waters, are termed National Pollutant Discharge Elimination System permits.

**No Violation of WDRs.** Currently, eight (8) wastewater treatment plants (WWTPs) discharge treated domestic wastewater into drains tributary to the Alamo River. Also, six (6) power-generating facilities and one (1) grass-carp hatchery discharge their wastes into the tributaries of the Alamo. All of these WWTPs and facilities have WDRs (NPDES permits) issued by the Regional Board. These point sources of pollutants are an insignificant source of the suspended solids in the Alamo River. Implementation of the TMDL will not cause any of these facilities to violate their permits or water quality standards. Currently, discharges of wastes from nonpoint sources (e.g., agricultural runoff) are not under WDRs.

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 34 of 50

**Less Than Significant Impact With Mitigation.** TMDL implementation will result in less than significant water quality changes in the Alamo River Watershed and the Salton Sea. Table 4, shows the typical selenium, salts, and nutrient concentrations found in tilewater, tailwater, and in the Alamo River and Salton Sea. Also, Table 5, below, shows the WQOs for the Alamo River Watershed and the Salton Sea.

Table 4 – Imperial Valley Surface Water Quality<sup>1</sup>

	Selenium (µg/L)	Salt (TDS mg/L)	Phosphates (mg/L)	Nitrate (NO <sub>3</sub> mg/L)
Colorado River (above Imperial Dam)	1-2	500-800	0.08	0.2
Tilewater	8-25	4000-4500	0.03 <sup>2</sup>	9 <sup>2</sup>
Tailwater	2	800-1000	NA	NA
Alamo River (at the Outlet)	8	2500-2900	0.7	8
Salton Sea (midpoint)	1	38,000-44,000	0.34	0.1
Imperial Valley Drains	15-300 <sup>2,3</sup>	1,000-5,000 <sup>4</sup>		

**Notes:**

1. CRWQCB-CRB Trend Monitoring Data. 1980-1993
2. CRWQCB-CRB. Draft report on Non-Point Source Water Quality Impacts Upon Agricultural Drains within the Colorado River Basin Region. September, 1992.
3. USGS. Water Resources Investigations 93-4014. Detailed Study of Water, Bottom Sediment, and Biota Associated with Irrigation Drainage in the Salton Sea Area, Ca. 1988-90. Setmire, et.at 1993.
4. US.Bureau of Reclamation. Southern California. Temecula CA.Selenium in water, sediment, and Transplanted Corbicula in Irrigation Drainage and Wildlife use of Drains in the Imperial Valley, CA 1994-1995. Setmire, J; Allen Hurlbert and Carol Roberts. 1999.

Table 5 – Salton Sea and Alamo River Watershed Water Quality Objectives

	4-hr Average Selenium (µg/L)	Annual Average TDS (mg/L)	Phosphates (mg/L)	Nitrate (NO <sub>3</sub> mg/L)
Imperial Valley Agricultural Drains	5	4000	Narrative	Narrative
Alamo River (at the Delta)	5	4000	Narrative	Narrative
Salton Sea (midpoint)	5	35,000	Narrative	Narrative

Source: Water Quality Control Plan for the Colorado River Basin, 1994; CRWQCB-CRB.

The salt WQO for the Salton Sea, in comparison to both tailwater and tilewater are relatively “fresh flows” for the Salton Sea. Based on research done by the USGS, discharges of tailwater constitute approximately 40-45% of the average annual flow in the Alamo River (641,970 AFY) (Jenson et al.,1997). The rest of the river flow is made up by tilewater (about 26%), canal seepage (13%), and operational spills (12%) (Jenson et al., 1997). The quality of the latter two components is essentially the same as irrigation water, which is basically the same as the quality of Colorado River water at Imperial Dam. Based on these percentages, and the concentrations shown above, seepage, operational spills, and discharges of tailwater are currently masking (i.e., diluting) salt, nitrate, and selenium concentrations of tilewater (i.e., the water is polluted by these constituents).

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 35 of 50

Based on the preceding paragraphs, altering the composition of water in the drains and the river (e.g., reducing tailwater flows) can trigger both positive and negative water quality changes. For example, a slight decrease in tailwater flows into the Alamo River Watershed would reduce the selenium, salt, and nutrient load into the Watershed. The flow reduction would also result in a slight decrease in the loading of the nutrients (mainly phosphorous) and a minor decrease in salt and selenium loads entering the Sea. On the other hand, a reduction in tailwater flows would cause an increase in salt and selenium concentrations in the Salton Sea as there would be less tailwater to dilute the salt and selenium concentrations currently found in tilewater. Discharges of tailwater into the Watershed for the sole purpose of diluting the current pollutants found in tilewater will not achieve compliance with State WQS. It is highly speculative to quantify how much flows in the Watershed may or will be reduced as a consequence of this project. Based on the analysis provided in the Introduction Section of this document, and that Imperial Valley farmers and IID have indicated that presently economically feasible steps are being taken to conserve water, in the absence of some other parties contributing additional funds, it can be concluded that the reduction, if any, will be less than significant. Subsequently, significant impacts on water quality (i.e., significant increases of pollutant concentrations in the Alamo River Watershed and the Sea) are unlikely as a result of implementing the proposed TMDL.

TMDL implementation (i.e., a reduction of sediment load) has the potential to alter the wildlife habitat currently provided and created by the sediment deposited by the Alamo River in areas surrounding its Delta with the Salton Sea. For the last 70 years, the IID has been conducting dredging operations within the Alamo River Watershed, essentially year-round to remove sediment/silt from these surface waters. The dredging operations in the drains are carried out to facilitate the flow of wastewater in the drains and prevent impacts that otherwise stagnant water conditions may cause on agricultural fields (e.g., raising the uppermost groundwater level, which could “drown” field crops). Reportedly, the dredging operations in the Alamo River near the Delta are necessary to prevent the current silt loading from creating adverse impacts (e.g., flooding) in adjacent areas by “damming” the Delta with sediment. For 1999, the IID removed about 475,000 tons of sediment annually from the Ag Drains in the Alamo River Watershed (IID, 2000) and about 25,000 tons of sediment annually from the Alamo River downstream of Garst Road Bridge, near the Delta with the Sea (IID, 2000). Implementation of the proposed TMDL is expected to reduce suspended sediment loading in the Alamo River at its outlet with the Salton Sea (i.e., at the Delta) by about 52% in three phases, over a 13-year period. The TMDL is necessary to address the water quality impacts caused by the insoluble pesticides (e.g., DDT and its metabolites) being transported by suspended sediments in the agricultural drains and the Alamo River.

The reduction of silt at the Delta coupled with the current IID dredging operations in the Alamo River Watershed, and in particular near the Delta, could result in a significant decrease in the inputs of silt/sediment at the Delta. These dredging operations have other water quality impacts, short-term and otherwise. For one, the drain dredging operations are responsible for at least 10% of the total sediment load in the river. They also result in significant increases in turbidity in these surface

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 36 of 50

waters, which results in violations of the current dissolved oxygen WQO for the surface waters. Similarly, the current dredging operations in the Alamo River Delta deplete the DO.

#### **Mitigation Measure**

To reduce this impact to a less than significant impact, and mitigate the DO violations, the proposed Basin Plan amendment will require the IID to submit a technical report pursuant to Section 13267 of the California Water Code describing the measures it proposes to take (e.g., decrease dredging) along with a monitoring program, to ensure that its overall dredging operations in the Alamo River Watershed do not result in the loss of habitat as a result of implementation of this TMDL and on-going violations of the DO WQO.

- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support the existing land uses or planned uses for which permits have been granted)?

**No Impact.** This project does not involve the extraction or recharge of groundwater supplies. The surface waters involved with this project do not recharge any groundwater aquifers that are of significant value in terms of their beneficial uses.

- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

**No Impact.** The purpose of this project is to eliminate excess delivery of silt/sediment to surface waters by implementing BMPs that minimize erosion and sediment deposition. Implementation of the BMPs for compliance with the TMDL (i.e., for silt/sediment reduction) will not result in an alteration of the course or drainage patterns of any surface water within the Alamo River Watershed.

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

**No Impact.** This project does require the alteration of area drainage patterns to comply with TMDL allocations. Alteration of drainage patterns (e.g., through re-routing surface waters, increased paved areas, or increased agricultural runoff) is not a foreseeable method of compliance with the TMDL. The project will not result in a rate or amount increase of surface runoff in any manner that would result in flooding on- or off-site.

- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?



### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 37 of 50

**No Impact.** The proposed project will not result in the contribution of any additional runoff or create any new sources of polluted runoff.

#### f) Otherwise substantially degrade water quality?

**Less Than Significant Impact.** Degradation, for the purposes of this subsection, consists of the lowering of water quality conditions in the Alamo River Watershed and Salton Sea. Substantial degradation is degradation that threatens violation of WQOs or results in a substantial reduction in the capacity of surface waters to assimilate pollutants. The goal of this project is to improve water quality conditions in the Alamo River Watershed, which is already degraded to the extent that it is impaired by silt/sediment, pesticides, and selenium (i.e., lacks assimilative capacity for these pollutants). These surface waters also carry nutrients and salts that are causing eutrophic conditions and salt impairments in the Salton Sea, primarily because of the Sea is a closed basin. Further magnifications in the aforementioned impairments have been addressed under Item No. 8a of this document.

As this watershed system is manmade, its pollutant assimilative capacity in general is mainly artificial and limited by the quality of the discharges of waste into the system. The discharges, nevertheless, are of sufficient quality in other respects that they allow the Alamo River and its tributaries to still have assimilative capacity for other pollutants (e.g., oxygen depleting pollutants). As required by state laws and regulations, the Regional Board will continue to regulate point sources of pollution through WDRs to ensure that degradation of water quality from these sources is mitigated and consistent with State and Federal antidegradation policies. It will also continue to use its tiered approach to control degradation caused by nonpoint sources. This project is consistent with that approach, and its implementation is not likely to result in any additional substantial degradation of water quality. The Regional Board will be implementing a comprehensive water quality monitoring program as part of this project to track water quality changes in the Alamo River, and will be implementing a comprehensive water quality monitoring program for the Salton Sea as part of its overall watershed management activities. Further, the proposed Basin Plan amendment requires that the IID implement a comprehensive water quality program in the drains to track water quality changes in the drains.

Because over 96% of the flows in the Alamo River and the Ag Drains are from agricultural discharges, significant changes in the volume and/or quantity of these agricultural discharges could have significant effects on the volume and/or quality of the flows in the Ag Drains and the Alamo River. The 1987 through 1996 average annual discharges to the New River, Alamo River and Ag Drains are summarized by source in Table 6, below.

Table 6: 1987-1996 Average Annual Discharges to the New River, Alamo River, and Imperial Valley Drains by Source

Source	Acre-feet	Percent
Operational Spill	123,018	12
Tailwater	479,661	48

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 38 of 50

Source	Acre-feet	Percent
Tilewater	261,278	26
Seepage	128,165	13
Total	992,122	100

Source: Jenson, M.E., Walter, I.H., June 1997

An operational spill is the quantity of fresh water that reaches the terminal end of an irrigation canal, but is not applied to the fields, and therefore is diverted into an Ag Drain. Tailwater, or surface runoff, is irrigation water that does not percolate into the soil, and exits the lower end of the field into the drain. Tailwater tends to erode fields and thus acquire silt and sediments as it crosses and exits a field. Tilewater, or subsurface drainage, is water that has percolated through the soil, but is not absorbed by crops. Tilewater flushes salts from the soil. This highly saline water accumulates in tile lines beneath the fields, wherein it is transported to drains by gravity flow or a sump system. Seepage denotes subsurface water that enters a drain due to a hydraulic gradient resulting primarily from loosing irrigation canals.

Because most sediment-control BMPs work by reducing the rate of surface runoff, the BMPs that are likely to be implemented were analyzed to determine the effects that they might have on the volume of agricultural tailwater discharges. Table 7, below, summarizes the result of that analysis.

Table 7: BMP Effects on Volume of Agricultural Tailwater Discharges

Best Management Practice	Potential for Tailwater Flow Reduction
Imperial Irrigation District Regulation No. 39	Negligible <sup>a</sup>
Tailwater Drop Box with Raised Grade Board	Negligible <sup>a</sup>
Improved Drop Box with Widened Weir and Raised Grade Board	Negligible <sup>a</sup>
"Pan Ditch" – Enlarged Tailwater Ditch Cross Section	Negligible
Tailwater Ditch Checks or Check Dams	Minor
Field to Tailditch Transition	Negligible
Furrow Dikes (a.k.a. C-Taps)	Minor <sup>a</sup>
Filter Strips	Negligible <sup>b</sup>
Reduced Tillage	Negligible
Channel Vegetation/ Grassed Waterway	Negligible
Irrigation Canal or Lateral	Negligible
<u>Notes:</u> a= Jones and Stokes Associates, 1996 b=USDA, 1996	

As Table 7 indicates, the potential effect of the widespread implementation of one or more of these BMPs on agricultural discharge volumes would be a minor to negligible reduction in the volume of tailwater discharged to the Ag Drains and the Alamo River.



### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 39 of 50

- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

**No Impact.** Housing developments are neither required by nor expected to result from this project. Therefore, the project will not place housing within a 100-year flood hazard area.

- h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

**No Impact.** This project does not require construction of any structures which would impede or redirect flood flows, and these types of structural controls are not expected to be implemented for compliance with the proposed TMDL.

- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

**No impact** No levees or dams will be constructed as a result of this project, and no levees or dams will be affected by this project.

- j) Inundation by seiche, tsunami, or mudflow?

**No impact** This project will not expose people or structures to any increased risk of inundation by seiches, tsunamis or mudflows.

## IX. Land Use and Planning

Would the project:

- a) Physically divide an established community?

**No Impacts.** The Basin Plan amendment itself will not result in any land use or planning impacts.

- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

**No Impacts.** The Basin Plan amendment itself will not result in any land use or planning impacts.

- c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

**No Impacts.** The Basin Plan amendment itself will not result in any habitat conservation plan or natural community conservation plan.

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 40 of 50

### X. Mineral Resources

Would the project:

- a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

**No Impacts.** The proposed project and implementation measures will not result in any mineral resources impacts. Implementation and construction of BMPs is expected to take place on farmland that has been under cultivation for at least the last 60 years and on existing agricultural drains.

- b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

**No Impacts.** No known mineral resources can be affected by the proposed actions.

### XI. Noise

Would the project result in:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan ordinance, or applicable standards of other agencies?

**No Impact.** The proposed project and its associated implementation of BMPs will not result in noise impacts. The BMPs themselves are not sources of any significant noise. Even though construction/installation of some of the BMPs may involve the temporary use of farming and construction equipment (e.g., tractors, backhoe, and caterpillars) that may emit noise at levels greater than 60 decibels, the construction/installation of the BMPs are set to take place on farmland that is not typically surrounded by sensitive receptors. Therefore, the project will not result in the generation of, or exposure of persons residing or working in the project area to, excessive noise levels or excessive groundborne vibration.

- b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

**No Impact.** The proposed project and its associated implementation of BMPs will not result in excessive groundborne vibration or noise levels.

- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 41 of 50

**No Impact.** The proposed project and its associated implementation of BMPs will not result in noise impacts. The BMPs themselves are not sources of any significant noise.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

**No Impact.** The proposed project and its associated implementation of BMPs will not result in noise impacts. The BMPs themselves are not sources of any significant noise.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

**No Impact.** The proposed project and its associated implementation of BMPs will not result in noise impacts. The BMPs themselves are not sources of any significant noise.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

**No Impact.** The proposed project and its associated implementation of BMPs will not result in noise impacts. The BMPs themselves are not sources of any significant noise. Even though construction/installation of some of the BMPs may involve the temporary use of farming and construction equipment (e.g., tractors, backhoe, and caterpillars) that may emit noise at levels greater than 60 decibels, the construction/installation of the BMPs are set to take place on farmland that is not typically surrounded by sensitive receptors.

## XII. Population and Housing

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

**No Impact.** The proposed project is not growth inducing.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

**No Impact.** The proposed project will not result in the displacement of any housing.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 42 of 50

**No Impact.** The proposed project will not result in the displacement of any people.

### **XIII. Public Services**

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- Fire protection?
- Police protection?
- Schools?
- Parks?
- Other public facilities?

**No Impact.** The proposed project and associated implementation of BMPs will not exert a demand on existing public services or require the provisions of new public services.

### **XIV. Recreation**

Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

**No Impact.** The proposed Basin Plan amendment and associated implementation of BMPs do not involve and will not cause the use or deterioration of recreational activities.

Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

**No Impact.** The proposed Basin Plan amendment and associated implementation of BMPs do not involve and will not cause the construction of recreational activities.

### **XV. Transportation/Traffic**

Would the project:

- a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 43 of 50

**Less Than Significant Impact.** The proposed Basin Plan amendment itself does not have any traffic impacts. Installation/construction of the BMPs by responsible parties will likely result in additional vehicle trips on existing streets, roads, and highways. This is an additional traffic load on existing streets, roads, and highways for Riverside and Imperial Counties. Since the majority of agriculture occurs in the rural areas of Imperial County, the potential project-related increase in traffic is insignificant, not cumulatively considerable, and will not affect street, road, or highway capacities, change traffic patterns, result in inadequate emergency access, affect parking capacity in the project area, or conflict with adopted traffic policies and plans for the area.

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

**No Impact.** Transportation and movement of farming equipment is typical in the streets, roads, and highways serving the area where BMPs are to be implemented.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

**No Impact.** Transportation and movement of farming equipment is typical in the streets, roads, and highways serving the area where BMPs are to be implemented.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

**No Impact.** Transportation and movement of farming equipment is typical in the streets, roads, and highways serving the area where BMPs are to be implemented.

e) Result in inadequate emergency access?

**No Impact.**

f) Result in inadequate parking capacity?

**No Impact.**

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

**No Impact.**

The proposed Basin Plan amendment itself does not have any traffic impacts. Installation/construction of the BMPs by responsible parties will likely result in additional vehicle trips on existing streets, roads, and highways. This is an additional traffic load on existing streets,

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 44 of 50

roads, and highways for Riverside and Imperial Counties. Since the majority of agriculture occurs in the rural areas of Imperial County, the potential project-related increase in traffic is insignificant, not cumulatively considerable, and will not affect street, road, or highway capacities, change traffic patterns, result in inadequate emergency access, affect parking capacity in the project area, or conflict with adopted traffic policies and plans for the area. Transportation and movement of farming equipment is typical in the streets, roads, and highways serving the area where BMPs are to be implemented. No increases in hazards are associated with the additional trips. Therefore, no impacts have been identified and no mitigation measures are necessary.

## XVI. Utilities and Service Systems

Would the project:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

**No Impact.** The proposed amendment and associated BMPs do not exceed wastewater treatment requirements.

- b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

**No Impact.** The proposed Basin Plan amendment and associated BMPs do not require construction or expansion of water supply or wastewater treatment facilities or service systems.

- c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

**No Impact.** The proposed Basin Plan amendment and associated BMPs do not require construction or expansion of water supply or wastewater treatment facilities or service systems.

- d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

**No Impact.** The proposed Basin Plan amendment and associated BMPs do not change the existing entitlements and resources.

- e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

**No Impact.** The proposed Basin Plan amendment and associated BMPs do not require construction or expansion of water supply or wastewater treatment facilities or service systems.

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 45 of 50

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

**No Impact.** Solid waste disposal should be reduced by implementation of the BMPs.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

**No Impact.** The proposed Basin Plan amendment and associated BMPs do not require construction or expansion of water supply or wastewater treatment facilities or service systems.

## XVII. Mandatory Findings of Significance

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? Based on currently planned projects and existing data, the implementation of BMPs and the corresponding sediment reduction do not show evidence of degradation of the quality of the environment, substantial reduction of habitat, fish or wildlife species, or its population.

b) Does the project have impacts that are individually limited, but cumulatively considerable ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)? Based on currently planned projects and existing data, the implementation of BMPs and the corresponding sediment reduction do not show evidence of cumulative considerable impacts.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? Based on currently planned projects and existing data, the implementation of BMPs and the corresponding sediment reduction do not show evidence of substantial adverse effects on human beings either directly or indirectly.

## XVIII. ALTERNATIVES DISCUSSION

### A. No Project Alternative

The "No Project" alternative would be no action by the Regional Board to adopt a TMDL with implementation measures and monitoring program. This alternative would not meet the purpose of the project, which is to correct ongoing violations of the Basin Plan water quality objectives applicable to sediment, and beneficial use impairments resulting from on-going violations. This alternative would result in continuing water quality standards violations, threats to public health,



## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

April 16, 2001

Page 46 of 50

and noncompliance with the requirements of the Clean Water Act. It is precisely because of these problems that law dictates a regulatory action. Therefore, the “No Project” alternative is not acceptable.

### **B. Preferred Alternative**

The "Preferred Alternative" has been the basis for all discussions in the TMDL, Basin Plan Amendment and CEQA information. The proposed project calls for attainment of interim numeric targets and corresponding load allocations. It is also based on the three-tiered approach to nonpoint source water quality control, which is consistent with the Plan for California's Nonpoint Source Pollution Control Program. The three tiers include: (1) self-determined NPS management, (2) regulatory encouraged NPS management, and (3) effluent limitations. The proposed Implementation Plan utilizes a combination of self-determined actions, including development and implementation of the Imperial County Farm Bureau Voluntary Program; and regulatory-encouraged actions, including the requirement that the Imperial Irrigation District develop and implement a water quality monitoring program, a sediment management program, and mitigate for associated impacts. There are considerable reasons to believe that compliance with the load allocations of this TMDL may be achieved using the proposed regulatory-encouraged approach called for in the Implementation Plan.

### **C. Alternative 2- Lower Numeric target**

This alternative is defined as the proposed project with a lower numeric target (i.e. lower target suspended solids (TSS) concentrations). Meeting this lower numeric target would require a lower total load, and thus lower load allocations to the agricultural dischargers in the watershed. The numeric target that would fit this alternative is the TSS concentration proposed by the National Academy of Sciences (NAS) as being protective of aquatic communities. NAS proposed that a TSS concentration of 80 mg/l or below should provide a moderate level of protection for aquatic communities (NAS, 1972). This target corresponds to about an 80% reduction of the current suspended solids concentration of the Alamo River at its outlet (377 mg/l). The environmental impacts associated with this alternative would be similar to the impacts of the proposed project, but the economic impacts to agriculture would be much greater as it would require the implementation of the most expensive BMPs.

### **D. Alternative 3- Increased Regulatory Oversight**

With Alternative 3 the Regional Board could utilize a TMDL implementation program with greater regulatory oversight, including the adoption of: a conditional waiver, a general permit, effluent limitations for the Imperial Irrigation District, and/or effluent limitations for individual responsible parties. Immediately implementing the TMDL at a high level of regulatory oversight could be unnecessarily burdensome on the regulated community, and unnecessarily exhaustive of limited Regional Board staff resources. Table 8 summarizes the Alternatives.

Table 8 Alternatives Summary



### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load

April 16, 2001

Page 47 of 50

Alternatives	Agricultural Resources	Biological Resources	Water Quality	Objectives Met Faster/Slower
No Project	None	Adverse Impacts	Adverse Impacts	Objectives not met
Preferred Alternative	Less than significant	Less than significant	Less than significant	Meet Objectives
Alternative 2	Less than significant	Less than significant	Less than significant	Meet Objectives same time frame
Alternative 3	Less than significant	Less than significant	Less than significant	Meet Objectives faster time frame

## ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 48 of 50

## REFERENCES

Baumhardt, R.L., C.W. Wendt, and J. W. Keeling. 1993. Tillage and furrow diking effects on water balance and yields of sorghum and cotton. *Soil Science Society of America Journal*, 57:1077-1083.

Bennett, Jewel. 1998. "Biological Effects of Selenium and other Contaminants Associated with Irrigation Drainage in the Salton Sea Area, California 1992-1994." U.S. Department of Interior National Irrigation Water Quality Program Information Report No. 4. U.S. Department of the Interior, National Irrigation Water Quality Program. Washington, DC.

Bennett, William W. and Robert D. Ohmart. 1978. "Habitat Requirements and Population Characteristics of the Clapper Rail (*Rallus longirostris yumanensis*) in the Imperial Valley of California." Submitted to University of California, Lawrence Livermore Laboratory.

Brown, M.J., J.A. Bondurant, and C.E. Brockway. 1981. Ponding surface drainage water for sediment and phosphorus removal. *Transactions of the America Society of Agricultural Engineers*, 24(6):1478-1481.

California Department of Fish and Game. 2001. California Natural Diversity Data Base (NDDDB): Data Base Information for Niland, Westmoreland East, Wiest, Alamo, Holtville East, Holtville West, Bond's Corner, and Calexico Quadrangles. State of California Resources Agency. Sacramento, California.

California, State of, 2001. California Environmental Quality Act Public Resources Code Division 13. Environmental Quality.

Carter, D.L., and R.E. Berg. 1991. Crop sequences and conservation tillage to control furrow erosion and increase farmer income. *Journal of Soil and Water Conservation*, 46(2):139-142.

Cocke, M. 2001. Personal Communication between Mr. Nadim Zeywar, CRWQCB-R7, and Mr. Mark Cocke, Northern California NRCS Office (Phone #: 530-792-5663).

Costa-Pierce, B.A., and R.W. Doyle. 1999. "Final Synthesis Document, Fish and Fisheries of the Salton Sea." Report to the Salton Sea Science Subcommittee. 12 pp.

Finco, M.V. 1999. Watershed Scale Sediment Yield Estimation from Surface Irrigated Agriculture: Imperial Valley, California. University of Utah, Department of Geography, Utah.

Imperial Irrigation District. 1978. Imperial Irrigation District water quality management plan. El Centro, CA.

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 49 of 50

Imperial Irrigation District, 2000. Existing Water Quality Projects. A List of Existing Water Quality Projects in the Imperial Valley generated by the staff of the IID and presented to the Silt TMDL TAC.

Imperial Irrigation District and Metropolitan Water District of Southern California, 2000. Water Conservation Program, Final Program Construction Report, IID Water Resources Unit.

Jenson, M.E. and Walter, I.A. 1997. Assessment of 1986-1997 Water Use by the Imperial Irrigation District using Water Balance and Cropping Data. Special Report Prepared for the U.S. Bureau of Reclamation. Boulder City, Nevada.

Jones & Stokes Associates. 1996. List of Agricultural Best Management Practices for the Imperial Irrigation District. Jones & Stokes Associates, Sacramento, CA.

Kranz, W.L., and D.E. Eisenhauer. 1990. Sprinkler irrigation runoff and erosion control using inter-row tillage practices. *Applied Engineering in Agriculture*, 6(6):739-744.

Lemly, A. Dennis. 1999. "Selenium Transport and Bioaccumulation in Aquatic Ecosystems: A Proposal for Water Quality Criteria Based on Hydrologic Units." *Ecotoxicology and Environmental Safety*. 42:150-256.

Limacher, Frank. 2000. Alamo River Sediment TMDL Economic Assessment. State Water Resources Control Board, Sacramento, CA.

National Academy of Sciences, National Academy of Engineering (NAS). 1972. Water Quality Criteria, 1972. U.S. Government Printing Office, Washington D.C.

O'Halloran, T., R. Stocker, and J. Vesey. 1992. Drainwater compliance for the Imperial Valley. Imperial Irrigation District, El Centro, CA.

Roberts, Carol. 2001. Email (02/05/01) to Teresa Newkirk, Regional Water Quality Control Board, Colorado River Basin Region.

Setmire, James, R.A. Schroeder, J.N. Densmore, S.L. Goodbred, D.J. Audet, and W.R. Radke. 1993. "Detailed Study of Water Quality, Bottom Sediment, and Biota Associated with Irrigation Drainage in the Salton Sea Area, California 1988-1990." U.S. Geological Survey Water Resources Investigation Report 93-4014. U.S. Geological Survey. Sacramento, CA.

Setmire, James. 1995. "Selenium in Water, Sediment, and Transplanted *Corbicula* in Irrigation Drainage and Wildlife Use of Drains in the Imperial Valley, California 1994-1995." U.S. Bureau of Reclamation. Temecula, CA.

Sojka, R.E. 1996. Management Options for Control of Irrigation-Induced Erosion: USDA/ Agricultural Research Service, Northwest Irrigation and Soils Research Laboratory, Kimberly, ID.

### ATTACHMENT 3.0 CEQA Checklist and discussion

Proposed Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load  
April 16, 2001

Page 50 of 50

United States Department of Agriculture. 1996. Natural Resources Conservation Service. Field Office Technical Guide, Section IV. Davis, CA.

United States Department of Agriculture. 1992. West Stanislaus sediment reduction plan. Soil Conservation Service. Water Resources Planning Staff. Davis, CA.

United States Department of Agriculture. 1989. Non-point source pollution planning of water quality improvement in western Stanislaus County. Soil Conservation Service. Patterson Field Office. Patterson, CA.

United States Department of Agriculture. 1986. Surge flow irrigation field guide. Soil Conservation Service. Washington, D.C.

## **ATTACHMENT 3A NATURAL ENVIRONMENT STUDY**

The purpose of the Natural Environment Study (NES) is to provide certain biological studies and information necessary for environmental documents to satisfy legal requirements of the various State and Federal statutes. Generally, the NES includes documentation of the biological resources in the project area and an assessment of the impacts of the project alternatives on those resources.

### **Project Description**

The proposed project consists of an amendment to the Water Quality Control Basin Plan for the Colorado River Basin Region (hereafter "Basin Plan") that will establish the Alamo River Sedimentation/Siltation Total Maximum Daily Load (TMDL). A TMDL is the maximum amount of a pollutant that a body of water can receive while it still meets water quality standards. The Basin Plan designates beneficial uses of waterbodies within the Region, establishes water quality objectives for the protection of these beneficial uses, and outlines a plan of implementation for maintaining and enhancing water quality. The existing Basin Plan includes sediment and turbidity narrative water quality objectives to protect beneficial uses for the Alamo River. The Alamo River is the main tributary of the Salton Sea, California's largest inland surface water body. The river has its headwaters several miles south of the International Boundary between the United States and Mexico, and travels roughly 60 river miles through Imperial County before it empties into the southeast corner of the Salton Sea, just east of the unincorporated community of Niland. Figures 1 and 2 show the Alamo River delta at the Salton Sea.

Excess delivery of suspended sediment to the Alamo River from agricultural drains owned and operated by the Imperial Irrigation District (IID), and from farmland in the Imperial Valley, exceeds the Basin Plan's water quality objectives for sediment and turbidity. This excess delivery of suspended sediments has resulted in degraded water quality conditions that impair the following designated beneficial uses: warm freshwater habitat; wildlife habitat; preservation of threatened, rare, and endangered species habitat; contact- and non-contact recreation; freshwater replenishment. The main sources of suspended sediment in the drains are agricultural tailwater and to a lesser extent dredging of the drains. Tailwater is irrigation water that is applied to fields, does not percolate into the soil, exits the lower end of the field, and typically flows into an IID drain tributary to the river. The proposed Basin Plan Amendment:

1. Updates references to the State's Nonpoint Source Pollution Control Program.
2. Includes the elements of the Regional Nonpoint Source Control Program.
3. Deletes dated information that is no longer accurate.
4. Establishes a site-specific water quality objective for the Alamo River of 200 milligrams per liter of total suspended solids for the entire U.S. reach of the river.
5. Adds a Section for the proposed TMDL that:
  - a. Summarizes the "technical" TMDL elements, including the Problem Statement, Numeric Target, Source Analysis, Margin of Safety, Seasonal Variation/Critical Condition information, Loading Capacity, and Allocations;

- b. Establishes interim numeric targets;
- c. Designates Responsible Parties and Management Actions;
- d. Lists recommended sediment control Best Management Practices (BMPs);
- e. Describes the recommended actions for cooperating agencies;
- f. Describes compliance assurance and enforcement activities for the proposed TMDL;
- g. Describes Regional Board monitoring, tracking, and assessment activities to monitor the implementation of the proposed TMDL;
- h. Describes the public reporting activities for the proposed TMDL; and
- i. Describes the Regional Board review process for the proposed TMDL.



**Figure 1. Alamo River Delta, Aerial View**

Part 130.2 of Title 40 of the Code of Federal Regulations defines BMPs as "methods, measures, or practices selected by an agency to meet its nonpoint source control needs. BMPs include but are not limited to structural and nonstructural controls and operation and maintenance procedures. BMPs can be applied before, during, and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters."



**Figure 2. Alamo River Delta**

## Study Methodology

**Literature review:** Research was done on the habitat, vegetation, and species in the Alamo River and Salton Sea delta area. The distribution of plant communities was mapped based on survey information and recent aerial photographs. Sensitive species /habitats looked for:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Desert pupfish	<i>Cyprinodon macularius</i>	SES/FE
California brown pelican	<i>Pelecanus occidentalis californicus</i>	SES/FE
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	SES/FE
California least tern	<i>Sterna antillarum browni</i>	SES/FE
Least Bell's vireo	<i>Vireo bellii pusillus</i>	SES/FE
Greater sandhill crane	<i>Grus canadensis tabida</i>	FT
Yuma clapper rail	<i>Rallus longirostris yumanesis</i>	STS-FP/FE
Tri-colored blackbird	<i>Agelaius tricolor</i>	SSSC
Burrowing owl	<i>Athene cunicularia</i>	SSSC
Least bittern	<i>Ixobrychus exilis</i>	FSSC
Loggerhead shrike	<i>Lanius ludovicianus</i>	FSSC
Yellow warbler	<i>Dendroica petechia</i>	FSSC
Van Rossem's gull-billed tern	<i>Sterna nilotica vanrossemi</i>	SSSC
Caspian tern	<i>Sterna caspia</i>	SSSC
Black skimmer	<i>Rynchops niger</i>	SSSC
California black rail	<i>Laterallus jamaicensis coturniculus</i>	STS-FP
Cooper's hawk	<i>Accipter cooperi</i>	SSSC
Sharp-shinned hawk	<i>Accipter striatus</i>	SSSC



Short-eared owl	<i>Asio flammeus</i>	SSSC
Long-eared owl	<i>Asio otus</i>	SSSC
Southern Willow Scrub		

Legend:

FSSC= Federal Species of Special Concern  
 FTS=Federal threatened species  
 SES=State endangered species  
 STS=State threatened species  
 SES-FP=State endangered species that is fully protected  
 SSSC=State Species of Special Concern

## Environmental Setting

The affected environment in the Alamo River watershed and the Salton Sea includes components of terrestrial and aquatic communities. These communities are made up of plant communities, some of which are sensitive habitat, and wildlife, including special-status wildlife species. The diversity and abundance of wildlife and available habitat are intricately associated. Environmental impacts to habitat will have direct impacts on the wildlife dependent upon that particular habitat. Habitats potentially affected include the sensitive habitat Southern willow scrub, non-native Tamarisk scrub, cismontane alkali marsh, freshwater marsh, mudflats, and open water.

Southern willow scrub communities are characterized by dense riparian thickets dominated by various *Salix* species that are associated with scattered emergent *Populus fremontii* and *Platanus racemosa* (CDFG, 1986). Southern willow scrub was once more widespread, but is now reduced due to urbanization, flood control, and alterations to stream drainages.

Tamarisk scrub consists mainly of introduced *Tamarix* species. These non-native shrubs replace native vegetation and reduce water available for wildlife.

Cismontane alkali marshes are associated with the Salton Sea delta and the Salton Sea. These marshes are low-lying areas characterized by standing water or saturated soil subject to low inputs of fresh water and high evaporation rates. This salty, alkaline environment supports several varieties of plants, including a thick cover of salt grass (*Distichlis spicata*) and emergent aquatic vegetation, such as cattails (*Typha* spp.) and alkali bulrush (*Scirpus robustus*) (Tetra Tech, Inc., 1999).

Freshwater marsh occurs mainly along unlined agricultural canals draining to the lake. These marshes are dominated by non-native species such as common reed (*Phragmites australis*), cattail (*Typha* spp.), golden dock (*Rumex maritimus*), and rabbitfoot grass (*Polypogon monspeliensis*). (Tetra Tech, Inc., 1999)

Open water habitat occurs in the Alamo River and the Salton Sea. The open water habitat is the portion that is always flooded and may support submerged or emergent vegetation. Algae make



up the primary plant community in the Salton Sea. Mudflats are free of vegetation and are periodically flooded and then exposed.



**Figure 3. Mudflats of the Alamo River Delta**

### **Biological Resources in the Project Area**

#### Sensitive Species

Several sensitive species are found in the Alamo River and Salton Sea Delta Area. The Yuma Clapper rail and bittern are known to occupy freshwater marsh areas in the Alamo River area and in the Salton Sea Delta area. The proposed TMDL is estimated to result in a greater than 50 percent reduction in siltation/sedimentation to the Alamo River, which would result in the same reduction in deposition to the Salton Sea delta. Current IID dredging operations remove an average of 24,000 tons of sediment per year from the Alamo River drainage from Garst Road to the Salton Sea, the area we describe as the Salton Sea delta. This current level of dredging coupled with the silt reduction resulting from this project will result in the loss of valuable habitat utilized by sensitive species in the Salton Sea delta area.

<b>Species</b>	<b>Scientific Name</b>	<b>Habitat</b>	<b>Presence-Seasonal</b>	<b>Potential of Being Impacted By Project</b>
Yuma Clapper Rail	<i>Rallus longirostris yumanesis</i>	Wetland	S	L
Brown Pelican	<i>Pelecanus occidentalis</i>	Water, Beach	S	L
Desert Pupfish	<i>Cyprinodon macularius</i>	Water	R	N
Burrowing Owl	<i>Athene</i>	Ag	R	L

Species	Scientific Name	Habitat	Presence-Seasonal	Potential of Being Impacted By Project
	<i>cunicularia</i>			
Greater Sandhill Crane	<i>Grus canadensis tabida</i>	Ag	W	N
California Black Rail	<i>Laterallus jamaicensis coturniculus</i>	Wetland, Beach	R	L
California Least tern	<i>Sterna antillarum browni</i>	Water, Beach	S	N
Reddish egret	<i>Egretta rufescens</i>	Water	S	N
Southwestern willow flycatcher	<i>Empidonax trailii extimus</i>	Riparian	S	N
Least Bell's vireo	<i>Vireo bellii pusillus</i>	Riparian	S	N
Tri-colored blackbird	<i>Agelaius tricolor</i>	Wetland, Riparian	S	L
Least bittern	<i>Ixobrychus exilis</i>	Wetland/Ag	S	L
Loggerhead shrike	<i>Lanius ludovicianus</i>	Ag	S	N
Yellow warbler	<i>Dendroica petechia</i>	Riparian	S	N
Van Rossem's gull-billed tern	<i>Sterna nilotica vanrossemi</i>	Water	S	N
Caspian tern	<i>Sterna caspia</i>	Water	S	N
Black skimmer	<i>Rynchops niger</i>	Water	S	N
Cooper's hawk	<i>Accipiter cooperi</i>	Riparian	S	N
Sharp-shinned hawk	<i>Accipiter striatus</i>	Riparian	S	N
Short-eared owl	<i>Asio flammeus</i>	Ag	S	N
Long-eared owl	<i>Asio otus</i>	Riparian	S	N

Legend:

Ag=Agriculture

Beach=mudflats/beach

Riparian=Willow scrub/ Tamarisk scrub

Water=Open water areas

Wetland=Emergent wetlands, marsh, alkali marsh

S=Spring/Summer

W=Winter

R=Resident

L=Low probability of being affected by project

N=No probability of being affected by project

#### Natural Communities

The primary habitat type is Tamarisk scrub and freshwater marsh. Habitat disturbance due to frequent dredging has resulted in the limited distribution of native vegetation throughout the Alamo River and Salton Sea delta area. Southern willow scrub and wetlands (freshwater marsh, alkali marsh, etc.) sensitive habitats, may be negatively impacted by reductions in deposition at the delta and removal of sediment by continued dredging activities.

#### Special Status Plant Species

No special status plant species were found within the project limits.

#### Plant List

Common Name	Scientific Name	Status
Chamise	<i>Adenostoma fasciculatum</i>	
Western ragweed	<i>Ambrosia psilostachya</i>	
Fiddleneck	<i>Amsinckia intermedia</i>	
Wild celery	<i>Apiastrum angustifolium</i>	
Mugwort	<i>Artemisa douglasiana</i>	
Giant Reed	<i>Arundo donax</i>	
Quail bush	<i>Atriplex canescens</i>	
Slender wild oat	<i>Avena barbata</i>	
Common wild oat	<i>Avena fatua</i>	
Black mustard	<i>Brassica nigra</i>	
Ripgut grass	<i>Bromus diandrus</i>	
Foxtail chess	<i>Bromus madritensis</i>	
Brome	<i>Bromus rubens</i>	
Sedge	<i>Carex barbarae</i>	
Yellow-star thistle	<i>Centaurea solstitialis</i>	
Bull thistle	<i>Cirsium vulgare</i>	
Poison Hemlock	<i>Conium maculatum</i>	
Common horseweed	<i>Conyza canadensis</i>	
Cardoon	<i>Cynara cardunculus</i>	
Jimsonweed	<i>Datura wrightii</i>	
Salt grass	<i>Distichlis spicata</i>	
Doveweed	<i>Eremocarpus setigerus</i>	
Long-beaked filaree	<i>Erodium botrys</i>	
Red-stemmed filaree	<i>Erodium cicutarium</i>	
Western sunflower	<i>Helianthus annuus</i>	

Common Name	Scientific Name	Status
Cow Parsnip	<i>Heracleum sphondylium</i>	
Telegraph weed	<i>Heterotheca grandiflora</i>	
Prickly lettuce	<i>Lactuca serriola</i>	
Alfalfa	<i>Medicago sativa</i>	
Common reed	<i>Phragmites australis</i>	
Bristly ox-tongue	<i>Picris echioides</i>	
	<i>Platanus racemosa</i>	
Arrowweed	<i>Pluchea sericea</i>	
Cottonwood	<i>Populus fremontii</i>	
Rabbitfoot grass	<i>Polypogon monspeliensis</i>	
Wild radish	<i>Raphanus sativus</i>	
Castor bean	<i>Ricinus communis</i>	
Golden dock	<i>Rumex maritimus</i>	
Willow	<i>Salix hindsiana</i>	
Russian thistle	<i>Salsola tragus</i>	
Brazilian pepper tree	<i>Schinus terebenthifolius</i>	
Alkali bulrush	<i>Scirpus robustus</i>	
Tamarisk	<i>Tamarix</i> spp.	
Poison oak	<i>Toxicodendron diversilobum</i>	
Cattail	<i>Typha latifolia</i>	
Stinging Nettle	<i>Urtica holosericea</i>	

### In Depth Studies for Special Laws

The Federal Endangered Species Act of 1973 (16 U.S.C. 1531-1543) provides for the conservation of endangered and threatened species and the ecosystems upon which they depend. Section 7 of the act requires Federal agencies, in consultation with and with the assistance of the Secretary of the Interior, to insure that actions they authorize, fund or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. The California Endangered Species Act (Fish and Game Code 2080) requires state lead agencies to consult with the Department of Fish and Game during the CEQA process to avoid jeopardy to threatened or endangered species.

### Mitigation Measures

At present, IID dredging operations that directly affect the Salton Sea delta occur within the drainage of the Alamo River from Garst Road to the Salton Sea. In this one-mile distance, dredging is performed about every two years and removes approximately two feet of sediment from bank to bank (Steve Charleton, 2000). The reduction of silt resulting from this proposed

TMDL, coupled with the current IID dredging activities in the Alamo River Watershed, could result in a significant decrease in the deposition of silt/sediment near the Salton Sea delta. This loss of silt/sediment could result in loss of habitat utilized by wildlife, including state and federally listed threatened and endangered species and in loss of sensitive habitat. Reduction of dredging, as well as timing of dredging, in the delta region would minimize impacts on the species and habitat of concern. Also, it would mitigate on-going violations of the 5 mg/L dissolved oxygen (DO) WQO for the river. Dredging along the Salton Sea delta should be minimized to reduce the likelihood of indirect impacts to Yuma clapper rail, California black rail, and sensitive habitat. Out of nesting season dredging would minimize impacts to burrowing owls and least bittern.

In order to reduce the effects of implementing this silt reduction TMDL to a less than significant impact on biological resources, staff is recommending that the Regional Board require the IID to submit a technical report, pursuant to Section 13267 of the California Water Code, describing the measures it proposes to take (e.g. decrease dredging), along with a monitoring plan, to ensure that its overall dredging operations in the Alamo River Watershed do not result in the loss of habitat and indirect effects on sensitive species as a result of implementation of this TMDL and mitigate DO violations.

## References

- Abrams, L. 1923. Illustrated Flora of the Pacific States. Stanford University Press. Stanford, California. Vols. I, II, and III.
- Abrams, L. 1960. Illustrated Flora of the Pacific States. Stanford University Press. Stanford, California. Vols. IV.
- American Ornithologists' Union. 1957. Check-list of North American Birds. 5th ed. American Ornithologists' Union. Washington, D.C.
- American Ornithologists' Union. 1983. Check-list of North American Birds. 6th ed. American Ornithologists' Union. Washington, D.C.
- Behler, J.L. and King, W.K. 1979. The Audubon Society Field Guide to North American Reptiles and Amphibians. Alfred A. Knopf, Inc. New York, New York.
- Bowler, Peter, A. 1989. Riparian Woodland: An Endangered Habitat in Southern California. In Endangered Plant Communities of Southern California-Proceedings of the 15th Annual Symposium (Special Publication No. 3). Southern California Botanists and California State University. Fullerton, California. Pp. 80-97.
- Brown, L., and D. Amadon. 1968. Eagles, Hawks, and Falcons of the World. McGraw-Hill Book Company. New York, NY.
- Burt, W.H. and Grossenheider. 1976. A Field Guide to the Mammals. Houghton Mifflin. Boston.
- California Department of Fish and Game (CDFG) 1989. Annual Report on the Status of California's State Listed Threatened and Endangered Plants and Animals. State of California Resources Agency. Sacramento, California.
- CDFG. 1980. At the Crossroads: A report on the status of California's Endangered and Rare fish and wildlife. State of California Resources Agency. Sacramento, California.
- CDFG. 1986. Descriptions of the Terrestrial Natural Communities of California. State of California Resources Agency. Sacramento, California.
- CDFG. 2001. California Natural Diversity Data Base (NDDDB): Data Base Information for Niland, Westmoreland East, Wiest, Alamorio, Holtville East, Holtville West, Bond's Corner, and Calexico Quadrangles. State of California Resources Agency. Sacramento, California.

Call, M.W. 1978. Nesting Habits and Surveying Techniques for Common Western Raptors. U.S. Department of the Interior, Bureau of Land Management. Technical Note TN-316. Z44.

Charleton, Steve. 2000. Letter to Daniel McClure, CRWQCB7. For Imperial Irrigation District.

Ehrlich, P.R., Dobkin, D.S., and Wheye, D. 1988. The Birder's Handbook. A Field Guide to the Natural History of North American Birds. Simon and Schuster Inc. New York, New York.

Ehrlich, P.R., Dobkin, D.S., and Wheye, D. 1992. Birds in Jeopardy -the Imperiled and Extinct Birds of the United States and Canada, Including Hawaii and Puerto Rico. Stanford University Press. Stanford, California.

Faber, Phyllis M., Robert F. Holland. 1988. Common Riparian Plants of California. Pickleweed Press. Mill Valley, CA.

Farrand, John Jr. 1983. The Audubon Society Master Guide to Birding. Gulls to Dippers. Alfred A. Knopf, Inc. New York.

Farrand, John Jr. 1983. The Audubon Society Master Guide to Birding: Loons to Sandpipers. Alfred A. Knopf, Inc. New York.

Fyfe, R.W., and R.R. Olendorff. 1976. Minimizing the dangers of nesting studies to raptors and other sensitive species. Canada Wildlife Service. Occas. Paper No. 23. 17 pp.

Garrett, K. and J. Dunn. 1981. Birds of Southern California: Status and Distribution. Los Angeles Audubon Society. Los Angeles, California.

Garth, J.S., and J.W. Tilden. 1986. California Butterflies. University of California Press. Berkeley, CA.

Grinnell, J., and A.H. Miller. 1944. The Distribution of the Birds of California. Cooper Ornithological Club. Pacific Coast Avifauna. No. 27.

Hall, E.R., and K.R. Kelson. 1959. The Mammals of North America. Ronald Press. New York, NY.

Harrison, Colin. 1978. A Field Guide to the Nests, Eggs and Nestlings of North American Birds. The Stephen Greene Press. Brattleboro, Vermont.

Hickman, J.C. 1993. Jepson Manual: Higher Plants of California. University of California Press. Berkeley and Los Angeles, California.

Ingles, L.G. 1965. Mammals of the Pacific States: California, Oregon, and Washington. Stanford University Press. Stanford, California.

Jennings, M.R. and Hayes, M.P. 1994. Amphibian and Reptile Species of Special Concern in California. Report for the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA under Contract Number 8023.

Laudenslayer, W.F., Jr., and W.E. Grenfell Jr. 1983. A List of Amphibians, Reptiles, Birds and Mammals of California. Outdoor California.

Munz, P.A. 1974. A Flora of Southern California. University of California Press. Berkeley, CA.

Munz, Philip, A. 1961. California Spring Wildflowers. University of California Press. Berkeley, CA.

O'Brien, S.J. and E. Mayr. 1991. "Bureaucratic mischief recognizing endangered species and subspecies." *Science* 251: 1187-1188.

Ornduff, R. 1974. Introduction to California Plant Life Univ. of Calif. Press, Berkeley, CA.

Peterson, R.T. 1961. A Field Guide to Western Birds. Houghton Mifflin Company. Boston, MA.

Remsen, J.V. 1978. Bird Species of Special Concern in California: An annotated list of declining or vulnerable bird species. Nongame Wildlife Investigations, Wildlife Management Branch. California Department of Fish and Game. Administrative Report No. 78-1.

Schoenherr, Allan A. 1990. Endangered Plant Communities of Southern California. Southern California Botanists, Rancho Santa Ana Botanic Gardens. Claremont, CA.

Smith, H.M. and Brodie, E.D. 1982 A Guide to Field Identification Reptile of North America. Golden Press, Western Publishing Company, Inc. Racine, Wisconsin.

Smith, J.P., and R. York. 1984. Inventory of Rare and Endangered Vascular Plants of California. California Native Plant Society. Spec. Pub. No. 1 (3rd Edition). Berkeley, California.

Sprunt, Jr., A. 1950. Loggerhead Shrike, in: Life Histories of North American Wagtails, Shrikes, Vireos, and their Allies. Ed. A.C. Bent. U.S. National Museum Bulletin No. 197. Washington, D.C.

Stokes, David W. 1979. A Guide to Bird Behavior, Volume I. Little Brown and Company. Boston, MA.

Terres, J.K. 1980. The Audubon Society Encyclopedia of North American Birds. Alfred A. Knopf, Inc. New York, New York.



Tetra Tech, Inc. 1999. Salton Sea Restoration Project Environmental Impact Statement/ Environmental Impact Report. Prepared for Salton Sea Authority and US Department of Interior and Bureau of Reclamation.

U.S. Department of Agriculture. 1982. National List of Scientific Plant Names. V:1-2.

U.S. Fish and Wildlife Service. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Biological Service Program. FWS/OBS-79/31.

U.S. Fish and Wildlife Service, 1980. Endangered And Threatened Wildlife and Plants: Review of Plant Taxa for Listing as Endangered or Threatened Species. Federal Register. Vol. 5, No. 242. pp. 82480-82569.

U.S. Fish and Wildlife Service. 1988. National List of Plant Species that Occur in Wetlands: 1988. Biological Report 88 (26.10).

U.S. Fish and Wildlife Service. 1989. Endangered And Threatened Wildlife and Plants: Notice of Review: Animal Candidate Review for listing as Endangered or Threatened species. Federal Register 54, 554.

U.S. Fish and Wildlife Service, 1991. Endangered And Threatened Wildlife and Plants: Notice of Review: Animal Candidate Review for listing as Endangered or Threatened Species. Federal Register 56, 58804-58836.

U.S. Fish and Wildlife Service, 1993. Endangered And Threatened Wildlife and Plants: Notice of 12-Month Petition Finding/Proposal to List *Empidonax traillii extimus* as an Endangered Species and to Designate Critical Habitat. Federal Register. Vol. 58, 39495-39522.

U.S. Fish and Wildlife Service, 1995. Endangered And Threatened Wildlife and Plants: Final Rule Determining /Endangered Status for the Southwestern Willow Flycatcher. Federal Register 60, 10694-10715.

Venning, Frank D. 1984. A Guide to Field Identification Wildflowers of North America. Western Publishing Company, Inc. Racine, WI.

Whitaker, J.O. 1980. The Audubon Field Guide to North American Mammals. Alfred A. Knopf, Inc.

Willett, G. 1933. Revised list of the birds of southwestern California. Pacific Coast Avifauna No. 21.

Zeiner, D.C., W.F. Laudenslayer Jr., K.E. Mayer, M. White, Eds. 1990. California's Wildlife. Vol 1: Amphibians and Reptiles. Vol 2: Birds. Vol 3: Mammals. CDFG. Sacramento.



**Winston H. Hickox**  
*Secretary for  
Environmental  
Protection*

# State Water Resources Control Board

---

## Office of Statewide Initiatives Economics Unit

California 95814 • (916) 341-  
Mailing Address: P.O. Box 100 Sacramento, California • 95812 0100  
-5284 • ghorner@exec.swrcb.ca.gov



**Gray Davis**  
*Governor*

### ATTACHMENT 4

**TO:** (1) John Norton  
Chief, Office of Statewide Initiatives

(2) Jose Angel  
TMDL Development  
Colorado River Basin Regional Water Quality Control Board

**FROM:** Gerald Horner, Ph.D.  
**Economics Unit**  
**Office of Statewide Initiatives**

**DATE:** April 12, 2001

**SUBJECT:** ALAMO RIVER SEDIMENT TMDL: ECONOMIC ASSESSMENT

The staff of the TMDL (Total Maximum Daily Load) Coordination Unit, of the Colorado River Basin Regional Water Quality Control Board, have requested that an economic analysis of the costs involved with the proposed TMDL for silt be prepared by the Economics Unit of the State Water Resources Control Board. A similar request was made by the Technical Advisory Committee (TAC) involved with the development of this TMDL.

This memo summarizes the results of the analysis of the implementation cost for the TMDL for silt within the Alamo River watershed. For the purposes of the economic analysis, it was assumed that the set of existing farming practices for each crop provides the largest profit margin, and is therefore the least expensive set of practices, and any change in these methods would result in higher costs to the farmer. Included in this analysis are (1) the costs related to alteration of existing farming practices in order to reduce sediment discharge from cropland, (2) the cost of monitoring to be incurred by Imperial Irrigation District (IID) and (3) the cost savings of maintenance accruing to the IID as a result of reduced sediment inflow into the drainage canal system.

However, specifically excluded from this estimate is the cost of compliance with IID Regulation No. 39 that requires maintenance and repair of the previously-installed standard "Tailwater Drop Boxes", with a maximum drop of 12 inches from field grade to top board height. Separate field surveys, performed in late 1999 and late 2000, have provided evidence that a significant percentage of these drop boxes are damaged, and that many are being used with drop elevations in excess of 18 inches, resulting in considerable field edge erosion. Since the maintenance of these

structures is mandated by IID regulation, any costs incurred in repairing the existing damaged units are excluded from the current estimate.

Also excluded from this estimate are any costs that may be associated with any future TMDLs, not related to the current sediment TMDL, that may be developed for this region. The specific proposals have not yet been developed, and may not be completed for several years. Therefore, it is impossible at this time to determine the costs associated with the implementation of other possible standards.

## COST ESTIMATE

### ***Farming Practices to Reduce Sediment Discharge***

The analysis of farming-practice costs related to reducing sediment loss was limited to an examination of current agricultural practices. The reduction of the quantity of sediment discharged into the agricultural drainage canals, from land being farmed, can be achieved by altering existing irrigation-related farm management practices. The amount of land erosion from an individual field, and subsequent sediment discharge into the drainage system, is dependent upon several factors:

the flow rate of water runoff	the characteristics of the tailwater ditch
the soil type	the slope of the field
the irrigation methods used	downslope and sideslope
the flow rate of inflow	the characteristics of the drop structure
the field size	(drop box) which conveys water
the crop being grown, or to be planted	off the field into the drain

Of these various factors, it is generally agreed that the most important factor is the flow rate of water runoff, or irrigation discharge. Although 28% of the harvested acreage in the Imperial Valley is devoted to vegetable and row-crops, the specific crop being irrigated has a relatively small impact upon the rate of sediment discharge into the drainage system, since this runoff is affected by many other factors.

A list of possible irrigation-related farm management practices that could result in reduced sediment discharge was submitted by the TAC. This list consisted of eight somewhat-related practices involving the control of drainage water. An additional list of ten management practices was prepared by the University of California Cooperative Extension (UCCE) staff of Imperial Valley Research Field Station. These ten practices have some overlap with the eight submitted by the TAC. The combined list consists of approximately twelve to fifteen separable management practices that could be incorporated into existing farming practices.

However, only a small number of these appeared to be potentially economically feasible, as well as culturally feasible in a situation of high-salt-content irrigation water. Management practices that may result in substantial reductions in sedimentation include:

- Installation of biodegradable fibermat filter strips in the drainage ditches. These can be used at strategic locations in the drainage area to act as water "speed bumps", to slow the surges of tailwater leaving the field through the drop-boxes.
- Construction of wide-profile drainage ditches incorporating grass-planted filter strips. As the grass roots hold the soil, and the grass itself acting to slow the movement of the tailwater, the tailwater surges would become less erosive.
- Construction of sediment basins to contain drainage water in order to allow suspended sediments to settle out. The captured sediments are dredged out periodically.
- Employing an additional irrigator to monitor the irrigation and employ alternative irrigation techniques. Employment of additional irrigating labor will not necessarily result in reductions in applied water, but will result in elimination of the surges of discharge water, identified as the primary cause of sediment discharge.

Each of these management practices is feasible, practicably or economically, only under certain conditions. These conditions can be crop-specific or field-specific. In some cases, individual preference may also be a factor.

The range of estimated costs associated with the individual irrigation management practices is summarized in the following table:

Practice	Annual cost, per acre		
	full install.	partial install	pct.
drainage ditch lined with fiber-mat			
3-year replacement cycle	\$29.40	\$8.90	30%
1-year use	\$52.50	\$15.90	30%
wide-profile irrigation ditch with planted grass strip	\$6.15		
sediment pond for 160 acres			
5-year cleanout cycle	\$19.80		
irrigation labor - 50% increase			
field crops	\$5 to \$13		
vegetable and row crops	\$30 to \$40		

After omitting the high-cost outlier, the annual costs – for the various irrigation drainage management practices reviewed – range from a low of about \$6 per acre for the wide-profile ditch to a high of about \$40 per acre for additional vegetable irrigation labor. Although this cost range appears to be quite broad, a comparison on a cost-share basis reveals that both amounts represent increases of up to 1% in per-acre gross production costs for field crops (annual production costs of \$500 - \$800) and vegetables (annual production costs of \$3,000 - \$5,000); this cost-share comparison is less accurate for non-vegetable row-crops, that have production costs of about \$1,500 per acre. Specific Imperial County crop production costs were obtained from reports compiled by the University of California Cooperative Extension.

Considering the amount of reduction in soil erosion, and subsequent delivery to the drainage system, the cost increases associated with the practices reviewed appear reasonable. Other changes in the current irrigation practices, changes that result in a reduced peak volume of discharge, will probably be implemented by some farmers. Better management of water discharges will reduce sediment outflow, and in many cases also reduced water inflow.

***Monitoring and Maintenance Costs to Imperial Irrigation District***

It is assumed that the proper maintenance of the drop boxes involves some systematic review of their general state of repair. Current compliance with IID Regulation No. 39 requires maintenance and repair of the previously-installed standard "Tailwater Drop Boxes". The costs associated with these activities are not newly-imposed, and therefore should not be attributed to the implementation of the sediment TMDL.

The projected target reduction of sediment discharge is 50% of the current level of discharge. The IID currently utilizes five large backhoes to continually remove from the canals the sediment that is discharged from the fields. With implementation of the sediment-reduction BMPs, up to two of these units would become redundant, and up to two full-time backhoe operators would no longer be needed. The cost savings to the IID are estimated at about \$100,000 per year. If this savings is passed on to the farmers, the net savings will be about twenty cents per acre. The magnitude of these cost savings is significantly smaller than the magnitude of the cost of the BMPs, that have a lower-end cost of about \$5 to \$13 per acre.

If you have any questions, please call me at (916) 341-5279.

Attachment

cc: Karen O'Haire, OCC



**FIBERMAT - PARTIAL INSTALLATION**

Install a FIBERMAT on the approach to a drain drop-box

C 350 installed in the final :				
400 ft of a ditch				
with a run of	1/4 mile	3/8 mile	1/2 mile	
	\$ 8.90	\$ 6.68	\$ 4.45	

C 125 installed in the final :				
400 ft of a ditch				
with a run of	1/4 mile	3/8 mile	1/2 mile	
	\$ 15.90	\$ 11.92	\$ 7.95	

ATTACHMENT 4

APPENDIX III: Sediment Pond Construction and Maintenance

ATTACHMENT 4

Appendix III

Annualized Cost Estimate

Construct a 5.45 a.f. capacity pond

160 acres (gross acreage, 147 net acres pre-pond)

145 acres post-pond

Construction Costs (initial):

	Total	Per acre
pond	\$5,750	\$39.66
inlet/outlet	\$480	\$3.31
	\$6,230	\$42.97

Maintenance Costs (annual):

	Total	Per acre
Excavation	\$1,425	\$9.83
\$11,400 5 yr cycle		
Weed/pest cntl	\$400.00	\$2.76
	\$1,825	\$12.59

project year	current price			TOTAL cost
	constr. cost	Cleanout each 8 yrs	weed/pest \$400	
1	\$6,230			\$6,230
2			\$400	\$400
3			\$400	\$400
4			\$400	\$400
5			\$400	\$400
6		\$11,400	\$400	\$11,800
7			\$400	\$400
8			\$400	\$400
9			\$400	\$400
10			\$400	\$400
11		\$11,400	\$400	\$11,800
12			\$400	\$400
13			\$400	\$400
14			\$400	\$400
15			\$400	\$400
16		\$11,400	\$400	\$11,800
17			\$400	\$400
18			\$400	\$400
19			\$400	\$400
20			\$400	\$400
21		\$11,400	\$400	\$11,800
TOTAL	\$6,230	\$45,600	\$8,000	\$59,830

Real Discount Rate	Expenditure	Real Discount Rate
6.0%	\$2,728	6.0%
Present Value	TOTAL cost	Present Value
\$6,230	\$2,728	\$2,728
\$377	\$2,728	\$2,574
\$356	\$2,728	\$2,428
\$336	\$2,728	\$2,290
\$317	\$2,728	\$2,161
\$8,818	\$2,728	\$2,039
\$282	\$2,728	\$1,923
\$266	\$2,728	\$1,814
\$251	\$2,728	\$1,712
\$237	\$2,728	\$1,615
\$6,589	\$2,728	\$1,523
\$211	\$2,728	\$1,437
\$199	\$2,728	\$1,356
\$188	\$2,728	\$1,279
\$177	\$2,728	\$1,207
\$4,924	\$2,728	\$1,138
\$157	\$2,728	\$1,074
\$149	\$2,728	\$1,013
\$140	\$2,728	\$956
\$132	\$2,728	\$902
\$3,679	\$2,728	\$851
\$34,014	\$57,288	\$34,018

these values are made equal with an annual expenditure of:  
about \$2,728

Averaged over a production acreage of: 145 acres

The annual const + maint. costs are \$18.81 per acre

The effective annual cost is: \$19.81 per acre

The pond sediment retention is expected to be	5.388	tons/yr-ac
The lost profit from the pond of size: 1 acre	\$145	= \$1/ac.
The price for one ton of sediment removed from the system:	\$3.68	



**ATTACHMENT 4**  
**APPENDIX IV: Cost of employing an additional irrigator in vegetable and row crops**

**ATTACHMENT 4**  
**Appendix IV**

**Determine the Per-Acre Cost**

70.0% field crops	Irrigators paid in 24-hr shift
30.0% vegetables/row crops	\$130 per day, for 40 acres applied to field crops

**COMPARE COSTS:**

**Veg/Row Crop Typical Costs:**

When irrigators are paid hourly rate		Irrigation labor costs vary	
		\$7.50	per hour
costs for vegetable/row crops	# irrigations	Approximate labor cost	
		per irrigated acre	
Lettuce	\$58.50	9	\$6.50
Cotton	\$60.00	10	\$6.00
Melons	\$60.00	8	\$7.50
Watermelons	\$72.50	10	\$7.25
Carrots	\$82.50	8	\$10.31
Onions	\$97.50	12	\$8.13

This indicates an irrigation rate of 2 acres per hour  
performed by 2 irrigators, working together

If an additional (third) irrigator is hired, the irrigation cost increases  
by about \$35 per acre of vegetable/row crops

This cost increase would represent a total increase in cost of production  
of these crops by about 1% to 3%.

**Field (flood-irrigated) Crops, Typical Costs:**

			per	per	No. of	per acre
			acre	hour	irrig/yr	seasonal cost
80 -acres, 2 fields						
alfalfa	\$ 130	per day for one irrigator	\$1.63	\$5.42	16	\$26.00
sudan	\$ 130	per day for one irrigator	\$1.63	\$5.42	6	\$9.75

If the single-irrigator system, employing one worker working for 24 hours is  
replaced by 2 irrigators, each working 12 hours, at \$7.50 per hour:  
The increased cost for irrigators will increase 40% from the current level  
Then, the **annual production cost increase for alfalfa** is approximately **1.3%**  
and the annual **cost increase for sudan** is approximately **0.8%**

	97-98 avg acres	revenue/acre
<b>VEGETABLES, all</b>	<b>106,740</b>	
Asparagus (+ new pl.)	5,801	\$4,285
Broccoli	8,601	\$4,746
Cabbage (gr)	1,123	\$3,942
Cantaloupes (spr + fall)	15,156	\$2,958
Carrots (tot)	16,215	\$3,907
Cauliflower	3,387	\$5,007
Sweet Corn (f + s)	5,322	\$2,352
Honeydew etc (spr+fall)	1,528	\$3,509
Lettuce, Head (tot)	20,180	\$4,384
Lettuce, Leaf	8,794	\$6,516
Misc. Veg.	5,361	\$5,094
Onions (tot)	10,043	\$3,748
Potatoes	2,703	\$4,011
Tomatoes	654	\$5,788
Watermelons	1,875	\$6,173
Sugar Beets	35,995	\$1,477
Cotton lint + seed	7,267	\$1,430
<b>VEGETABLES &amp; ROW CROPS</b>	<b>150,001</b>	<b>27.5%</b>
<b>FIELD CROPS (non-row)</b>	<b>390,694</b>	<b>71.6%</b>
Alfalfa Hay	172,220	\$801
Misc. Field crops	19,229	\$613
Sudangrass Hay	78,815	\$523
Wheat	88,657	\$489
Bermudagrass Hay	31,774	\$367
<b>TREE CROPS, all</b>	<b>4,913</b>	<b>0.9%</b>
<b>ALL CROPS, TOTAL</b>	<b>545,608</b>	

Note: Data source, Imperial County Agricultural  
Commissioner's Crop Reports, 1997 and 1998.

# ATTACHMENT 4

## APPENDIX IV: Cost of employing an additional irrigator in vegetable and row crops

### Determine the Per-Acre Cost

70.0% field crops
30.0% vegetables/row crops

Irrigators paid in 24-hr shift
\$130 per day, for 40 acres
applied to field crops

### COMPARE COSTS:

#### Veg/Row Crop Typical Costs:

When irrigators are paid hourly rate		Irrigation labor costs vary	
		\$7.50 per hour	
		Approximate labor cost	
costs for vegetable/row crops	# irrigations	per irrigated acre	
Lettuce	\$58.50	9	\$6.50
Cotton	\$60.00	10	\$6.00
Melons	\$60.00	8	\$7.50
Watermelons	\$72.50	10	\$7.25
Carrots	\$82.50	8	\$10.31
Onions	\$97.50	12	\$8.13

This indicates an irrigation rate of 2 acres per hour performed by 2 irrigators, working together

If an additional (third) irrigator is hired, the irrigation cost increases by about \$35 per acre of vegetable/row crops

This cost increase would represent a total increase in cost of production of these crops by about 1% to 3%.

#### Field (flood-irrigated) Crops, Typical Costs:

		per acre	per hour	No. of irrig/yr	per acre seasonal cost
80 -acres, 2 fields					
alfalfa	\$ 130 per day for one irrigator	\$1.63	\$5.42	16	\$26.00
sudan	\$ 130 per day for one irrigator	\$1.63	\$5.42	6	\$9.75

If the single-irrigator system, employing one worker working for 24 hours is replaced by 2 irrigators, each working 12 hours, at \$7.50 per hour:  
The increased cost for irrigators will increase 40% from the current level  
Then, the **annual production cost increase for alfalfa** is approximately **1.3%**  
and the annual **cost increase for sudan** is approximately **0.8%**

# ATTACHMENT 4

## Appendix IV

	97-98 avg acres	revenue/acre
<b>VEGETABLES, all</b>	<b>106,740</b>	
Asparagus (+ new pl.)	5,801	\$4,285
Broccoli	8,601	\$4,746
Cabbage (gr)	1,123	\$3,942
Cantaloupes (spr + fall)	15,156	\$2,958
Carrots (tot)	16,215	\$3,907
Cauliflower	3,387	\$5,007
Sweet Corn (f + s)	5,322	\$2,352
Honeydew etc (spr+fall)	1,528	\$3,509
Lettuce, Head (tot)	20,180	\$4,384
Lettuce, Leaf	8,794	\$6,516
Misc. Veg.	5,361	\$5,094
Onions (tot)	10,043	\$3,748
Potatoes	2,703	\$4,011
Tomatoes	654	\$5,788
Watermelons	1,875	\$6,173
Sugar Beets	35,995	\$1,477
Cotton lint + seed	7,267	\$1,430
<b>VEGETABLES &amp; ROW CROPS</b>	<b>150,001</b>	<b>27.5%</b>
<b>FIELD CROPS (non-row)</b>	<b>390,694</b>	<b>71.6%</b>
Alfalfa Hay	172,220	\$801
Misc. Field crops	19,229	\$613
Sudangrass Hay	78,815	\$523
Wheat	88,657	\$489
Bermudagrass Hay	31,774	\$367
<b>TREE CROPS, all</b>	<b>4,913</b>	<b>0.9%</b>
<b>ALL CROPS, TOTAL</b>	<b>545,608</b>	

Note: Data source, Imperial County Agricultural Commissioner's Crop Reports, 1997 and 1998.